

# Manufacturers Record

## Industry Construction



\$6.50 per Year.  
Single Copy, 20 Cents.

Baltimore, Md.  
NOVEMBER 13, 1930

## Depleted Shelves a Business Deterrent



By permitting their stocks to become depleted, many merchants have unwittingly contributed to the hampering of trade activity. Cautious buying has been the rule in many lines of business. Seasonal goods are being purchased to some extent but there are many necessities that are missing from retailers' shelves. Evidence is accumulating that customers sometimes are unable to get what they want.

Inventories are so low that in case of an increase in demand retailers would have difficulty in getting goods. Such, at any rate, is the expressed belief of the head of a great chain store organization.

A nationally-known tire manufacturer predicts there will be a shortage of tires next spring. His prediction is based on the fact that only one and a half tires per car in use have been sold this year, which means that spare tires and repaired tires have been keeping the cars moving.

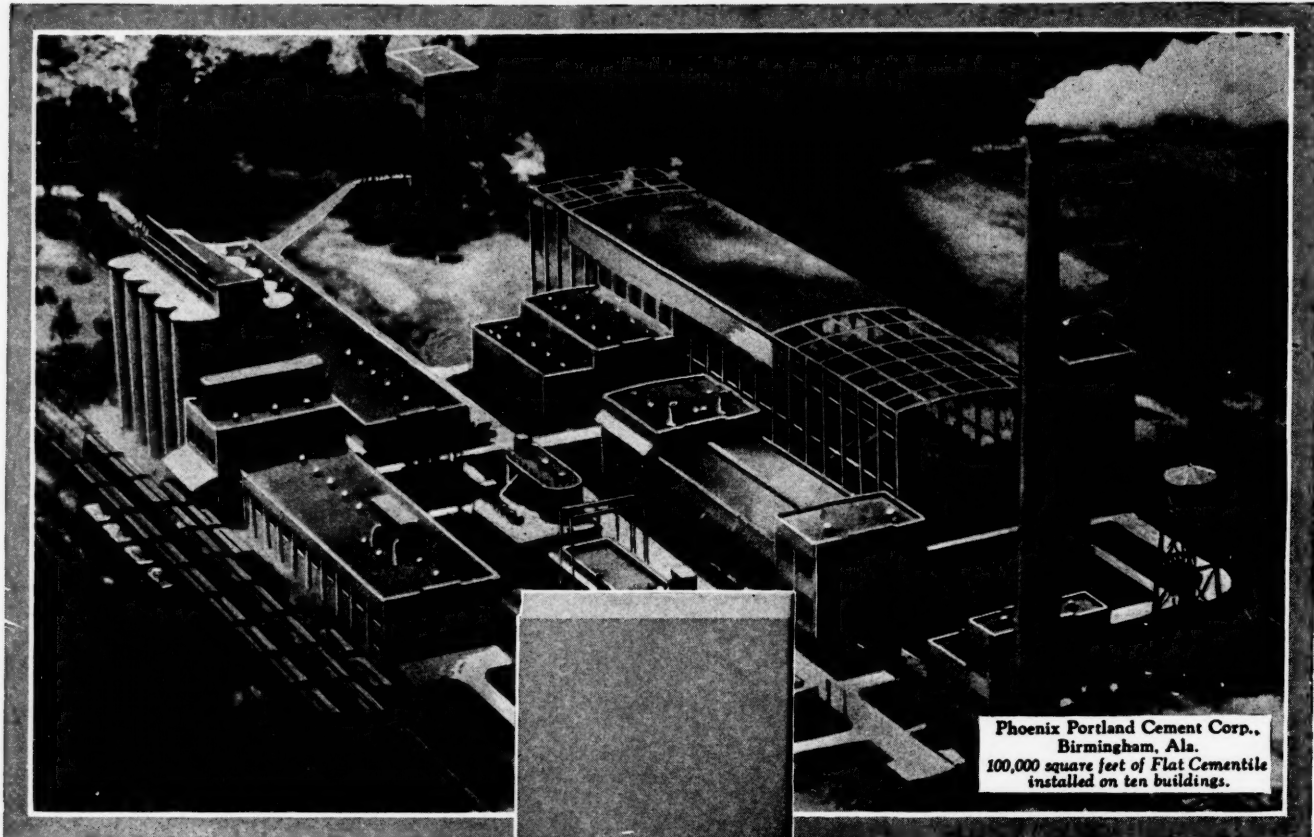
Retail coal stocks are low, indicating that consumers are facing the winter "imperfectly prepared, either for business activity or for domestic comfort."

That low-stocked shelves are in evidence in certain stores is being reported to the Manufacturers Record from many sources. A correspondent, in describing the inability of his wife to find stockings and clothing for the children in a large department store, adds that the saleswoman explained she had no such stock to show and that her frequent requisitions for additional stock were turned down by the store manager. In another store, a prospective purchaser found that the furniture department had no desks in stock.

Businesslike retail buying that keeps inventories within reasonable limits is contributory to general prosperity. The power of suggestion of goods on display leads to sales. Unwillingness to restock, because of over-cautious management, unnecessarily slows down the machinery of production. It is highly probable that too much stress has been laid on the virtue of working on a hand-to-mouth basis in retail distribution. Conditions do not justify the length to which this practice appears to have been carried.

Retailers should restock their unfilled shelves and tell the public through advertising of the values they have to offer. To a large extent, merchants have it in their power to quicken business all the way from the production of raw materials to the finished product, through creating desire and in supplying the wants of customers.

## Repeat Orders Are the Best Testimonials



*...over 85% of Cementile users repeat their original roof specifications when constructing new buildings.*

This striking record of repeat orders during Cementile's 27 years of manufacture tells its own convincing story—that Cementile is the most satisfactory and most economical industrial roof obtainable.

Included among these endorsers of Cementile superiority are prominent Architects, Engineers and Contractors, as well as Owners.

Many original Cementile roofs have given efficient service without maintenance for more than 20 years, safeguarding workmen, valuable equipment and products housed in the buildings beneath.

Fireproof, weatherproof, proof against fumes, hot cinders and other destructive agents, Cementile roofs prove unsurpassed for enduring, serviceable life. Write for a Cementile Catalog for detailed explanation.

AMERICAN CEMENT TILE MANUFACTURING CO.

804 Oliver Building, Pittsburgh, Pa.

Plants: Wampum, Pa. Lincoln, N. J. Birmingham, Ala.

Offices: Pittsburgh New York Philadelphia Boston Atlanta Birmingham

# CEMENTILE

Entered as second-class matter at the Postoffice, Baltimore, Md., under the act of March 3, 1879.





## IMMEDIATE STEEL

### More than 10,000 Sizes and Kinds of Steel Products

Here are huge stores of steel that offer unusual possibilities for concentrating purchases and thus saving time, trouble and money. The diversity of stocks, the wide range of sizes carried, with prompt service assured, provides an economical source for those following the generally accepted current buying method. You will find many advantages in grouping orders for immediate shipment from your nearest Ryerson Steel-Service Plant.

A few of the many steel products  
always in stock for immediate shipment

#### THE HEAVY STEEL LINES

Immediate shipment of all standard sizes, cut to length.

Structural "I" Beams  
Structural "H" Beams  
Angles  
Channels  
Tees

Zees  
Plates  
H Columns  
Girder Beams

#### SPECIAL STEELS

Alloy Steels conforming to various S. A. E. Specifications.

Ryolite "4 Point" Chisel Steel.  
Ryolite Tool Steel in different analyses meeting the various tool steel requirements.  
Ascoloy, a corrosion resisting chrome iron.  
Allegheny Metal, a SUPER corrosion resisting metal.

#### MACHINERY

Including a complete line of machine tools and metal-working equipment of all kinds.

Lathes  
Shapers  
Milling Machines  
Drills  
Friction Saws  
Grinders  
Bending Rolls  
Horizontal Drills

Punches  
Shears  
Welding Equipment  
Flue and Spring Shop Equip.  
Motors  
Power Hammers

#### THE COMPLETE BAR STOCKS

Including all standard sizes.

Mild Steel  
Cold Finished  
Refined Iron  
Reinforcing  
Forging  
Screw Stock

Shafting  
Free Cutting  
Stem Rounds  
Ascoloy  
Alloy Steel  
Tool Steel

#### SPECIAL SHEETS

"C" Pickled  
Single Pickled  
One Pass Cold Rolled  
Galvanized  
Blue Annealed  
Patent Leveled  
Silver Finished  
Tool Steel  
Extra Deep Stamping

Uniform Blue  
Vitreous  
Enameling  
Wellsville  
Polished  
Partition  
Bill Poster  
Armco Iron  
Lead Coated  
Allegheny  
Electrical

#### SMALL TOOLS

A complete line of the smaller metal-working tools for every industry.

Electric Drills  
Clamps  
Chucks  
Benders  
Saws

Hoists  
Sheet Metal Tools  
Punches  
Forges, etc.  
Shears

And a hundred and one other tools.

#### BUILDING SPECIALTIES

Reinforcing Steel and Accessories  
Wire Mesh  
Expanded Metal  
Steel Joist  
Wire  
Plastering Channels  
Metal Lath

Corrugated Sheets  
Base Scream  
Corner Bead  
Picture Mold  
Bar Chairs  
Spacers  
Bar Supports  
Spirals

#### GLYCO BABBITT

The four grades of Glyco Babbitt metal meet all the varying needs of industry.

"Turbo" Glyco for the most extreme heavy duty service.

"Marine" Glyco for electric motors and similar applications where service is severe.

"Standard" Glyco for an infinite variety of ordinary bearing positions.

"Transmission" Glyco is recommended when stresses are unimportant.

#### OTHER SPECIAL LINES

Strip Steel  
Bolts and Nuts  
Boiler Tubes and Fittings  
Welding Rods  
Floor Plates

Steel Grating  
Stair Treads  
Tag Protectors  
Turnbuckles  
Wire  
Rivets

Write for the Ryerson Journal and Stock List—"Key to Immediate Steel"

### JOSEPH T. RYERSON & SON, INC.

Plants: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City

Representation in: Minneapolis, Rockford, Kansas City, Tulsa, Houston, Newark, New York, Denver, Los Angeles, San Francisco

# RYERSON STEEL-SERVICE

# ONLY JENKINS....

*have both these advantages*

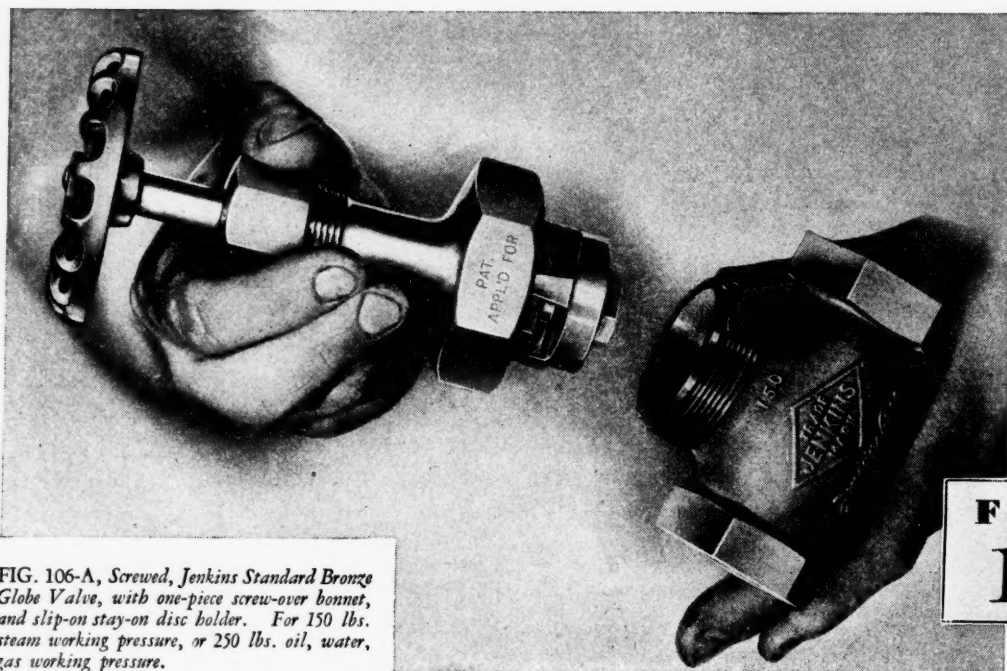


FIG. 106-A, Screwed, Jenkins Standard Bronze Globe Valve, with one-piece screw-over bonnet, and slip-on stay-on disc holder. For 150 lbs. steam working pressure, or 250 lbs. oil, water, gas working pressure.

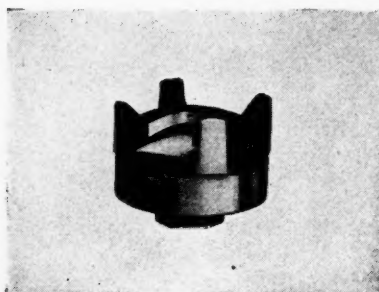
**FIGURE  
106-A**



Note the fine'y finished screw-over bonnet that is made from a single piece of selected Jenkins Valve Bronze.

A SCREW-OVER bonnet that is made in one piece and a slip-on stay-on disc holder combine advantages obtainable only in Jenkins Valves . . . Standard Bronze Globe, Angle and Cross Valves.

Ask your supply man to let you examine Jenkins Fig. 106-A. Note the large hex faces on the one-piece bonnet which enable you to obtain a good grip with a wrench. You can remove and replace the bonnet over and over again. The sturdy one-piece construction provides strength against springing or distortion. At supply houses everywhere. Write for Bulletin 141.



Then remove the bonnet and look at the slip-on stay-on disc holder. It slips on, but when the bonnet is removed, this disc holder won't slip off until you want it to.

## JENKINS BROS.

80 White Street New York, N. Y.	524 Atlantic Avenue Boston, Mass.	133 No. Seventh Street Philadelphia, Pa.
646 Wash. Blvd., Chicago, Ill.	1121 No. San Jacinto, Houston, Tex.	
JENKINS BROS., Limited,	Montreal, Canada	London, England
Factories: Bridgeport, Conn.	Elizabeth, N. J.	Montreal, Canada

# Jenkins VALVES

Since 1864

JENKINS VALVES ARE ALWAYS MARKED WITH THE "DIAMOND"



**TALK NUMBER ELEVEN BY A PROMINENT DISTRIBUTOR**

Mr. E. Flanagan  
of the  
Zork Hardware Company,  
El Paso, Texas  
says:

**"We Are a Factor in . . .  
Community Prosperity**



Above—The Zork Hardware Company, of El Paso, Texas. This company's services are of a definite economic value to the prosperity of its business territory.

Therefore—a direct asset to every consumer in this territory. Our value to our territory depends entirely upon its prosperity and its support. If we recognize and meet our obligations to those within our natural boundaries—then—we earn our right to existence in preference to any direct competition. We recommend Republic's Belting—Hose—Packing—Molded and Lathe Cut Goods."

The above statement is characteristic of those made by prominent distributors all over the country. It explains in part how the Industrial Supply Distributor, helping to solve the important problem of broad markets and economical distribution, upholds high quality, maintains fair prices and saves needless efforts on the part of both consumer and manufacturer.

**THE  
REPUBLIC RUBBER CO.**

**Youngstown  
Ohio**



**REPUBLIC means  
the Best Mechanical  
Rubber Goods**

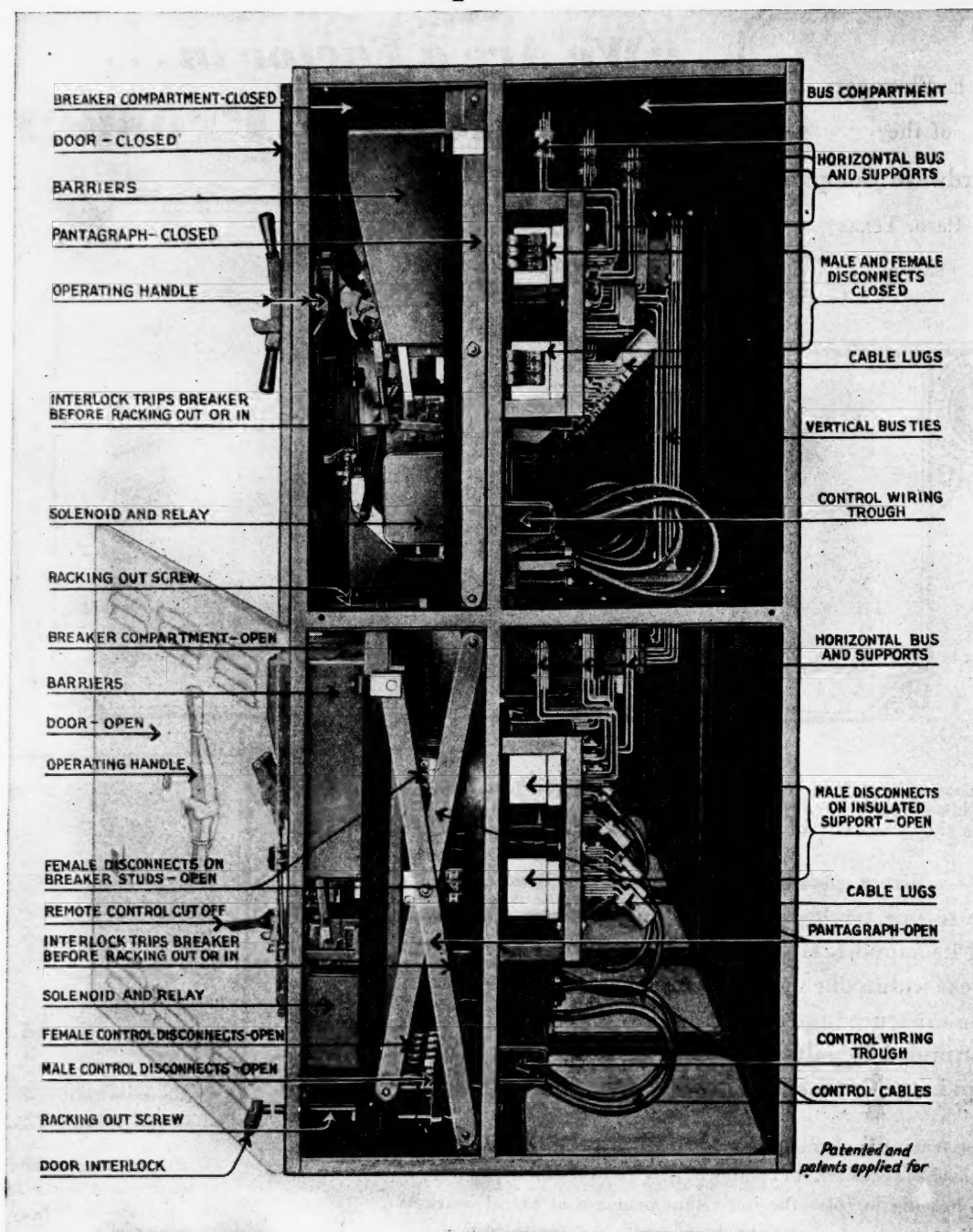


Challenger Transmission Belting—a square edged belt without seams to open up—with body sufficient to hold belt fasteners—with very little stretch and a gripping power that reduces power losses caused by slippage.

Recommended for heavy or troublesome drives.

Write for a sample

## The Inside Story of the Multumite



This is a Multumite-Hingite group mounting ten solenoid operated U-Re-Lites of 1250 amperes capacity at 440 volts, 3 phase, 60 cycles. Multumite groups are also made without the double disconnects (Rigite con-

struction) and with hand operated U-Re-Lites mounted from two to six high, according to capacity.

Get in touch with our nearest representative for data on a Multumite group to meet your requirements.

**I-T-E CIRCUIT BREAKER COMPANY, 19th and HAMILTON STS., PHILADELPHIA**

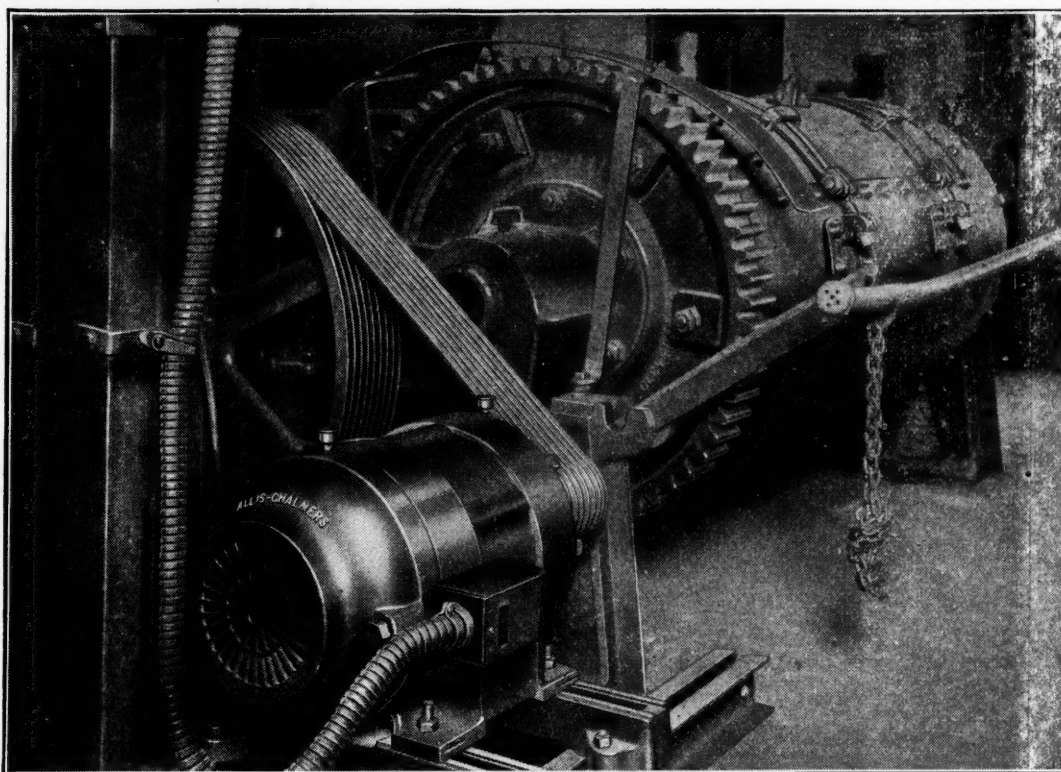
Birmingham, Crawford Bldg.; Boston, 201 Devonshire; Buffalo, Ellcott Sq. Bldg.; Chicago, 333 N. Michigan Ave.; Cincinnati, Union Trust Bldg.; Cleveland, Terminal Tower Bldg.; Denver, Tramway Bldg.; Detroit, Penobscot Bldg.; Duluth, Providence Bldg.; Kansas City, Midland Bldg.; Los Angeles, 106 W. 3rd; Minneapolis, Plymouth Bldg.; Montreal, 151 LaGauchetiere St. West; New Orleans, 708 Girod St.; New York, 12 E. 41st St.; Omaha, Electric Bldg.; Philadelphia, 1505 Race; Pittsburgh, Grant Bldg.; St. Louis, Bank of Commerce Bldg.; San Francisco, Call Bldg.; Seattle, 802 33rd Ave.; Toronto, 149 Adelaide St. E.; Vancouver, 500 Beatty Street; Winnipeg, National Carriage Office Building.

# I-T-E PROTECTION

U-RE-LITES ~ I-T-E CIRCUIT BREAKERS



ARZ motor and Tex-rope drive operating tumbling mill in an iron foundry cleaning small castings.



## Even Iron Dust is Harmless to these enclosed fan-cooled motors

Even in an atmosphere laden with iron dust and fine sand this Allis-Chalmers totally enclosed fan-cooled motor operates without trouble as the dust and dirt cannot get inside the motor.

Previously an open type motor was used for driving the tumbling barrel and required frequent repairing due to the iron dust working through the insulation, causing burnouts.

Allis-Chalmers totally enclosed fan-cooled motors are permanently protected against the effects of dust, dirt, moisture, or similar destructive agents. The unique means by which this protection is accomplished is described in Leaflet 2124, a copy of which will be sent you on request.

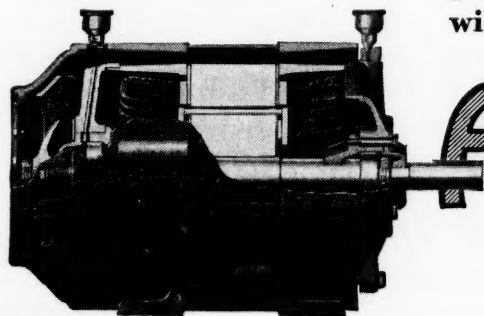
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This motor is ideally suited for locations where dust, dirt, acid fumes or moisture tend to shorten the life of motor windings. It is particularly applicable to carbon black plants, foundries, cement plants, textile mills, chemical plants, coal preparation or for outdoor service, etc.

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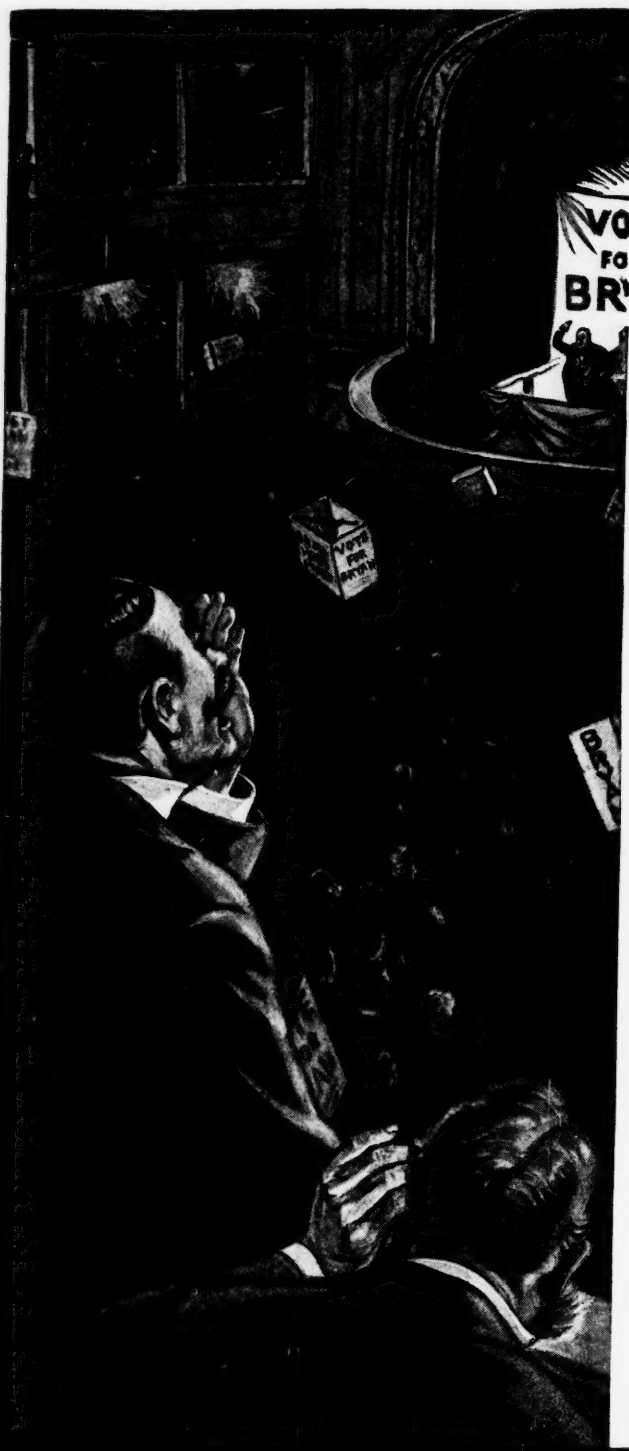
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# ALLIS-CHALMERS

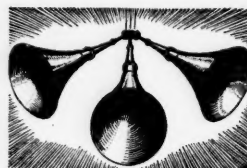
Totally Enclosed  
Fan-cooled **MOTORS**

**Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin**



# "Louder... louder!"

*--- a cry of the past*



Straining forward to hear the speaker they were all ears and he was all lungs—but still they couldn't understand him. No wonder

"louder please"—and remarks less courteous—were bywords at old time gatherings.

That was before Western Electric showed the world how to amplify and distribute the voice. Today the Western Electric Public Address System brings every word of the speaker to you, even in the last row of the balcony or on the far edge of the largest crowd outdoors.

And this, like most achievements in voice reproduction, was made possible only by this organization's long experience in making Bell telephones.

## Western Electric

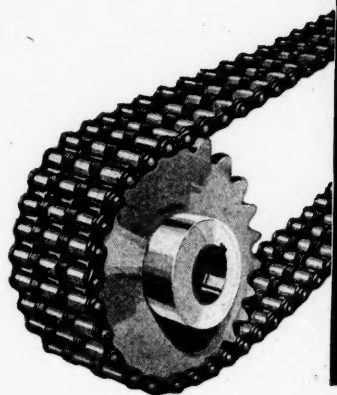
*Makers of your Bell telephone and leaders  
in the development of sound transmission*



*For easy hearing, the Western Electric Public  
Address System makes every seat a front seat.*



Now—when  
you need a  
Drive



$\frac{1}{4}$  to 75  
HORSE-POWER

$\frac{1}{1}$  to  $\frac{8.4}{1}$   
RATIO

and up to 1800  
R. P. M.

You can get a  
**DIAMOND STOCK DRIVE**  
*to fit . . .*

BESIDES the added convenience of immediate availability, Diamond Roller Chain Drives have very definite mechanical advantages. Rugged, efficient, quiet, rolling contacts which reduce friction, contact parts treated for wear resistance alone, simple in design and installation.

These features make Diamond Drives unsurpassed for durability, trouble-free service and low maintenance.

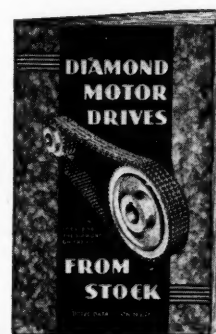
Drive Data Book No. 78 makes the selection of drives to meet your conditions as simple and efficient as the drives are mechanically. Send for this Book—it lists and describes the drives carried in stock by a distributor near you and at our plant.

DIAMOND CHAIN & MFG. CO.  
411 Kentucky Avenue Indianapolis, Ind.  
Offices and Agents in Principal Cities

TRADE  MARK

Ask for  
Drive Data Book No. 78

Use the reminder coupon below



DIAMOND CHAIN & MFG. CO.  
411 Kentucky Ave., Indianapolis, Ind.

Gentlemen:

Please send me a copy of Drive Data Book No. 78, as well as the name of your nearest distributor, without obligation.

Name .....

Business Name .....

Business Address .....

City..... State.....

**DIAMOND CHAIN**  
ROLLING AT POINTS OF CONTACT

# and... in the South

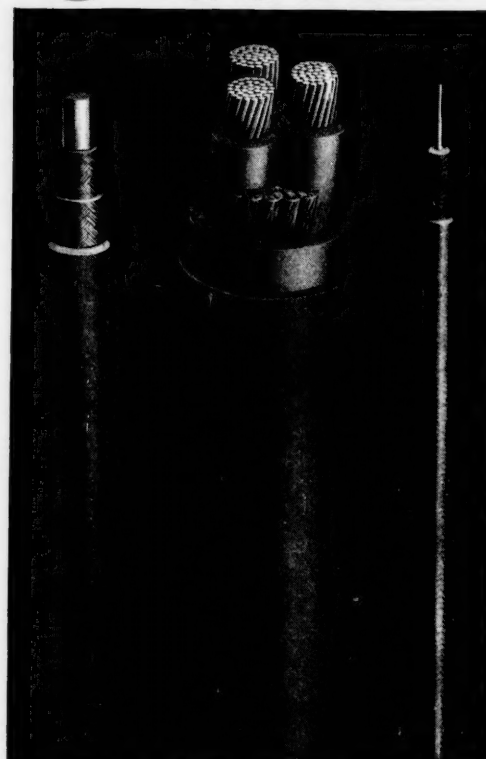
these better  
Electrical Wires and Cables  
prove their superiority...



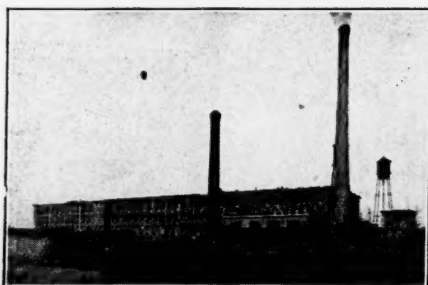
It has become almost a custom in the south, to specify American Steel and Wire Company Electrical Wires and Cables for use where dependability and economy are essential.

The proved ability of these better products to render unfailing service—to not only meet, but to surpass all national code requirements—and the reliability of their maker, has developed for them a pronounced leadership.

No matter what your transmission problem may be—whether you need standard or special wires and cables—you will find us ready to serve you—to afford every engineering and manufacturing facility. Today—get in touch with our nearest office.



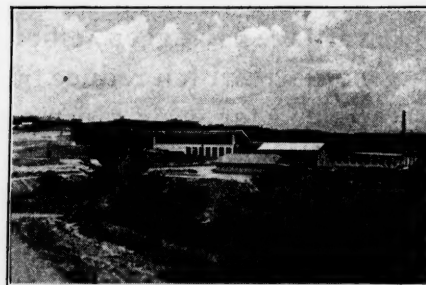
Left—Reliance Weatherproof Wire.  
Center—Varnished Cambric Cable.  
Right—Rubber Covered Wire.



Ninety-Six Cotton Mills at Ninety-Six, S. C. Engineers: J. E. Sirrine & Co., Greenville, S. C. Electrical Contractors: Huntington & Guerry Inc., Greenville, S. C. Material: American Steel & Wire Company Electrical Wires and Cables.



Piedmont Print Works (Southern Bleachery in background) Taylor, S. C. Engineers: J. E. Sirrine & Co., Greenville, S. C. Electrical Contractors: Huntington & Guerry, Inc., Greenville, S. C. Material: American Steel & Wire Company Electrical Wires and Cables.



Slater Mfg. Company at Marietta, S. C. Engineers: J. E. Sirrine & Co., Greenville, S. C. Electrical Contractors: Huntington & Guerry, Inc., Greenville, S. C. Material: American Steel & Wire Company Electrical Wires and Cables.

## AMERICAN STEEL & WIRE COMPANY

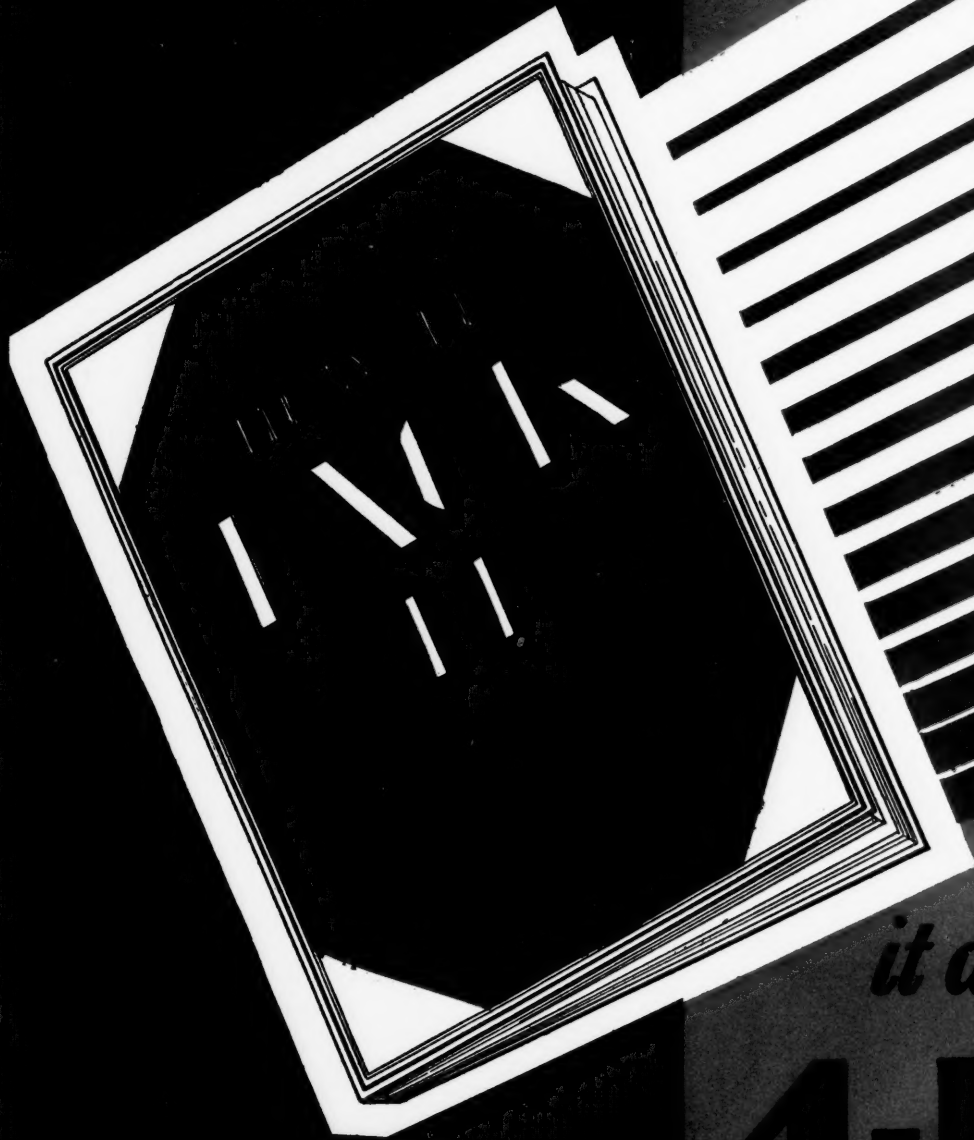
208 S. La Salle Street, Chicago  
Other Sales Offices: Atlanta Baltimore Birmingham  
Denver Detroit Kansas City Memphis Milwaukee  
Pittsburgh Salt Lake City St. Louis  
Pacific Coast Distributors: Columbia Steel Company,  
San Francisco Los Angeles Portland Seattle Honolulu



30 Church Street, New York  
Boston Buffalo Cincinnati Cleveland Dallas  
Minneapolis-St. Paul Oklahoma City Philadelphia  
Wilkes-Barre Worcester  
Export Distributors: United States Steel Products Co.,  
30 Church St., New York City



# GET THIS BOOK!



*it demonstrates the*

## **4-FOLD**

## **ADVANTAGE**

*of proper packaging*

# Proper Packaging has a 4-Fold Advantage

H & D

H & D Package Engineers are ready to help you benefit by the economies to be effected by a replan of your shipping boxes. They have the experience of the world's largest packaging organization to draw upon.



**R**IGHTLY designed, your package will meet four definite requirements. It will give *complete protection* to your product in shipping or storage—it will be *convenient to handle* in packing or unpacking—it will be *low in cost*—it will make a *favorable, sales-inducing impression* on your customers.

H & D corrugated fibre shipping boxes have this four-fold advantage. They are scientifically designed and built by the world's largest packaging organization, with years of experience in solving the packing problems of shippers in all lines of business.

"How to Pack It," the latest booklet issued by the H & D Package Engineers, will give you some interesting information on packaging your product. Mail the coupon below and a copy will be sent without charge.

## THE HINDE & DAUCH PAPER COMPANY

336 DECATUR STREET SANDUSKY, OHIO

*Western Address:*

KANSAS CITY FIBRE BOX CO.

PACKERS STATION

KANSAS CITY, KANSAS

*Canadian Address:*

KING STREET SUBWAY AND HANNA AVE.

TORONTO

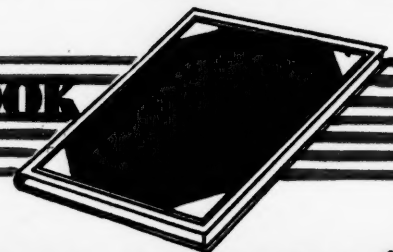
# HINDE & DAUCH

# SHIPPING BOXES

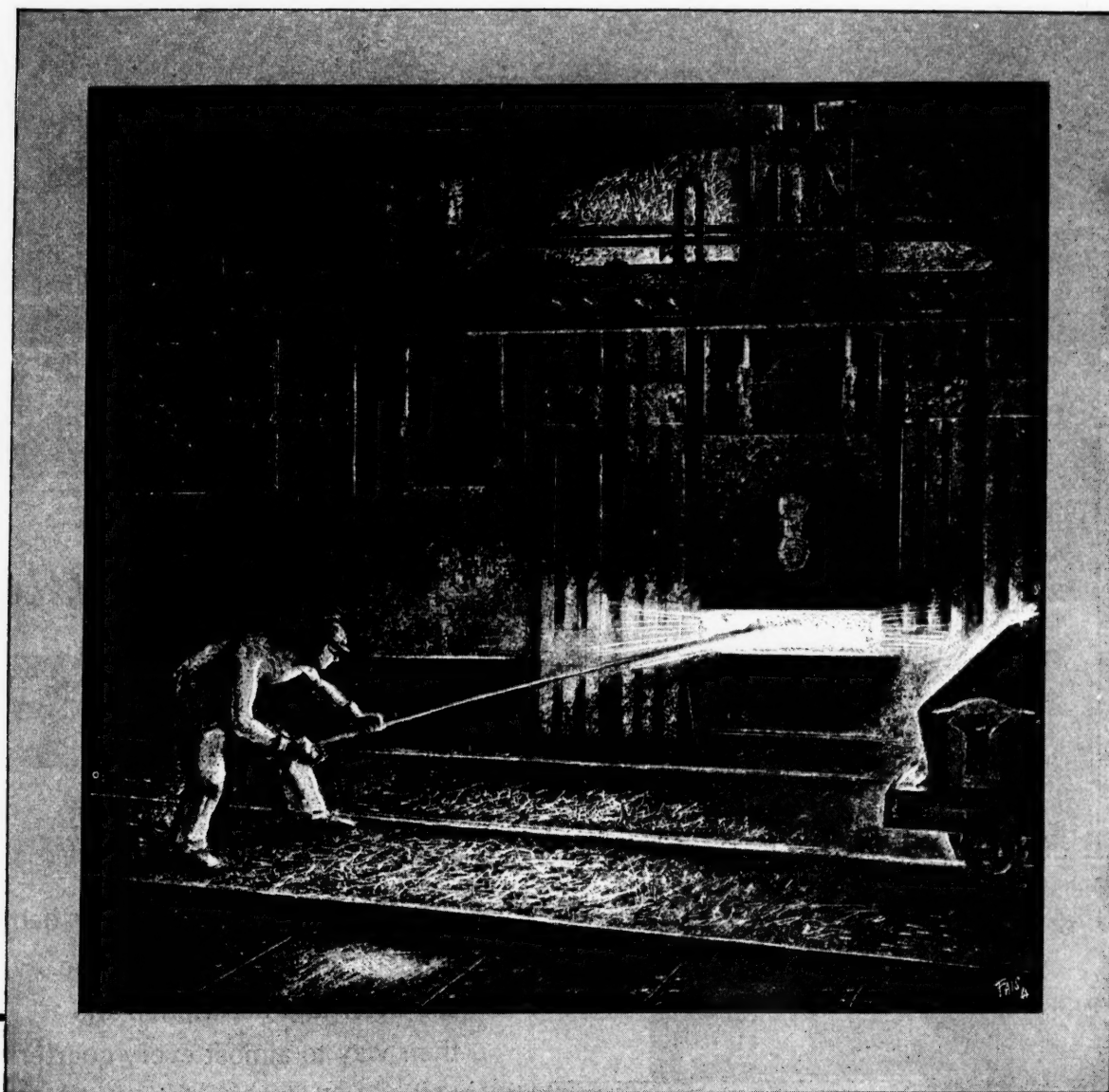
THE HINDE & DAUCH PAPER CO.  
336 Decatur Street -:- Sandusky, Ohio  
Please send me a copy of "How to Pack It."

Signature..... We Pack.....  
Company Name.....  
Address.....  
City..... State.....

**GET THIS BOOK**



← **SEND THIS COUPON !**



## Cooking the "*broth*" this way costs more ... *but see the results!*

CAREFULLY the "cooks" tend their cauldrons of seething metal. One scans his "broth" with practiced eye...and adds more of this, or of that. Another dips a sample for testing. Each bubbling potful is painstakingly watched, "seasoned", tested... clear through to the final pouring.

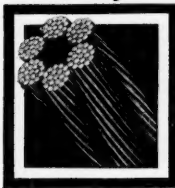
Talk to a Roebling steel man and he will tell you that this exceptionally close control of the melt is made

possible through using only *small* open-hearth furnaces. That making steel this way costs more...but a consistently higher grade, unvarying product results. It is this *old-fashioned thoroughness*... coupled with modern production methods...that makes Roebling "Blue Center" Steel Wire Rope what it is!

JOHN A. ROEBLING'S SONS COMPANY

WIRE • WIRE ROPE • WELDING WIRE • FLAT WIRE  
COPPER AND INSULATED WIRES AND CABLES  
TRENTON, N. J. *Branches in Principal Cities*

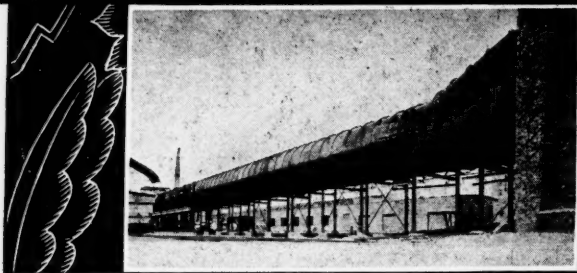
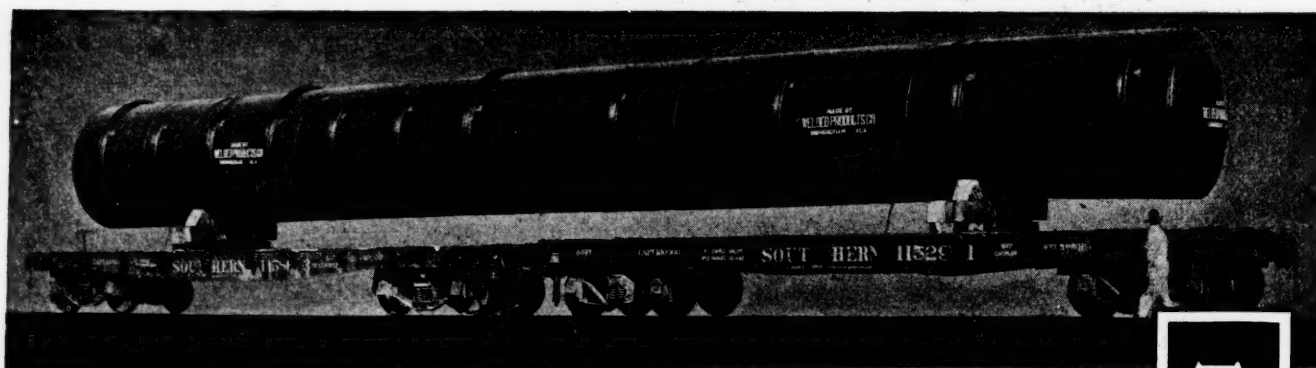
# ROEBLING



"BLUE CENTER"  
STEEL

# WIRE ROPE





**US**  
STEEL

# Unusual Plate Work with **TENNESSEE STEEL**



Tennessee's plates are daily being utilized in plate work of practically every character and description and are finding their way to almost every quarter of the globe. In the severe bending and forming operations attendant upon both standard and special uses they have been tried and found not wanting.

Illustrated on this page are a pontoon by Welded Products Company; treating cylinder by R. D. Cole Manufacturing Company; balloon flue, miscellaneous tanks and blast furnace work by Birmingham Tank Company—all from Tennessee Plates. Write for full information.



**Tennessee Coal, Iron & Railroad Company**

General Offices: Brown-Marx Building, Birmingham, Ala.

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

PRINCIPAL SUBSIDIARY MANUFACTURING COMPANIES OF UNITED STATES STEEL CORPORATION:

AMERICAN BRIDGE COMPANY  
AMERICAN SHEET AND TIN PLATE COMPANY  
AMERICAN STEEL AND WIRE COMPANY

Pacific Coast Distributors—Columbia Steel Company, Russ Bldg., San Francisco, Calif.

CARNEGIE STEEL COMPANY  
COLUMBIA STEEL COMPANY  
CYCLONE FENCE COMPANY

FEDERAL SHIPB'LDG. & DRY DOCK CO.  
ILLINOIS STEEL COMPANY  
NATIONAL TUBE COMPANY

Export Distributors—United States Steel Products Company, 30 Church St., New York City

THE LORAIN STEEL COMPANY  
TENNESSEE COAL, IRON & RAILROAD CO.  
UNIVERSAL ATLAS CEMENT COMPANY



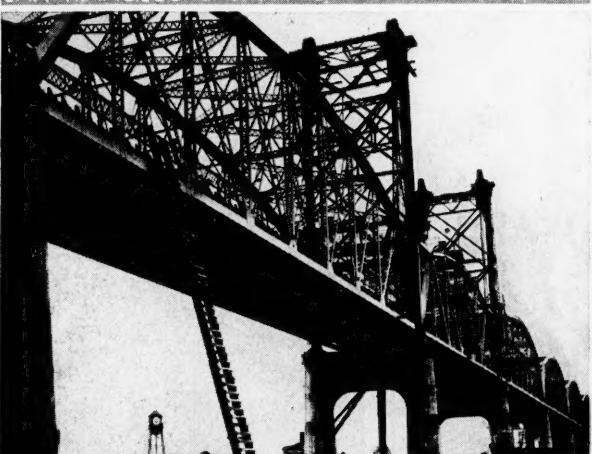
JAMES RIVER BRIDGE, NEWPORT NEWS, VA.



COCHRANE BRIDGE OVER MOBILE BAY, MOBILE, ALA.



SAN FRANCISCO BAY BRIDGE, SAN FRANCISCO, CAL.



EVERETT-MARYSVILLE BRIDGE, NEAR SEATTLE, WASH.

## Weight and Counterweight

WITH each Vertical Lift Span there are two counterweights, one at each end to counterbalance the weight of the lift span as it raises up and down. Sheaves, cables, gears and motors properly coordinated and synchronized permit easy operation and lifting of hundreds of tons of weight.

We have built in the past twenty years or more a great many vertical lift bridges throughout the country. This is only one of the many kinds of steel work, both bridges and buildings which we do. But it is probably the most exacting to be found. And its successful handling indicates a thoroughly capable organization to which may be safely intrusted all problems of steel design and construction.

Let us furnish you designs and estimates on your steel needs whether they are large or small. If you have not decided to use steel, let us show you its advantages and economies. No obligation is involved.

### VIRGINIA BRIDGE & IRON CO.

Roanoke Birmingham Memphis Atlanta New Orleans  
New York Los Angeles Charlotte Dallas El Paso

## VIRGINIA BRIDGE STEEL STRUCTURES

**James River Bridge:** More than 5 miles long and crosses the historic James River just above its mouth at Newport News. The engineers were J. E. Greiner Company, Baltimore, Md., and Turner Construction Co., New York, general contractors.

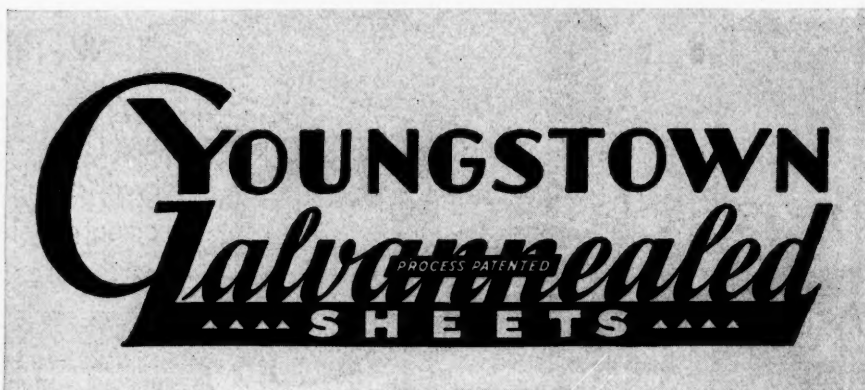
**Cochrane Bridge, over Mobile Bay:** This Lift Span is 325 feet long and raises to a clear height of 135 feet above water. Harrington, Howard & Ash, Kansas City, Mo., were engineers and Kansas City Bridge Co., Kansas City, General Contractors.

**San Francisco Bay Bridge:** One of the longest highway bridges in the world, 7 miles in length. Waddell & Hardesty, New York, Engineers, and Raymond Concrete Pile Co., New York, General Contractors. View shows lift span being floated into place by our erection forces.

**Everett-Marysville Bridge:** An important highway bridge hook-up by the State of Washington, on which we furnished a number of fixed spans, 2 swing spans and a vertical lift. J. A. McEachern Co., Seattle, were General Contractors on the entire project. Waddell & Hardesty were Engineers on the lift span.



# THE ZINC STAYS ON THIS DULL FINISH SHEET



## *The Heat Test and What It Proved*

**Y**OUNGSTOWN GALVANNEALED SHEETS possess many desirable features besides their ability to withstand seaming and tight pressing without the zinc coating peeling, cracking, scaling and dropping off. They withstand extremely high temperatures (coupled with rapid and complete cooling) without injury to their dull protective coating of zinc, as is evidenced by the results of a test recently completed.

These sheets are easy to work; they resist corrosion; they are readily spot welded; the coating does not chip, flake, peel or crack under high temperatures or during severe fabricating processes; they take paint, lacquer and duco without priming, weathering or chemical treatment, a factor which makes them ideal for all sign work. For complete details of *Youngstown Galvannealed Sheets*, 'phone, write or wire our nearest District Sales Office. Youngstown products are distributed by leading jobbers in all parts of the country.

The results of a heat test recently completed to determine the resistance to separation of the base metal and the zinc coating of *Youngstown Galvannealed Sheets* clearly demonstrates the unusual bonding which has been effected between the protective coating and the base metal of this sheet. Cylinders formed of these sheets were heated to 600 degrees F. for 8 hours—then allowed to cool for 16 hours—this process was continued for 14 days and at the end of this severe test there was no trace of deterioration. The photograph below shows a cylinder made from a *Youngstown Galvannealed Sheet* at the end of this test. This photograph graphically illustrates the bonding which has taken place through the patented process used in applying the zinc coating to *Youngstown Galvannealed Sheets*.

### THE YOUNGSTOWN SHEET AND TUBE COMPANY

*One of the oldest manufacturers of copper-steel, under the well-known and established trade name "Copperoid"*

General Offices—YOUNGSTOWN, OHIO

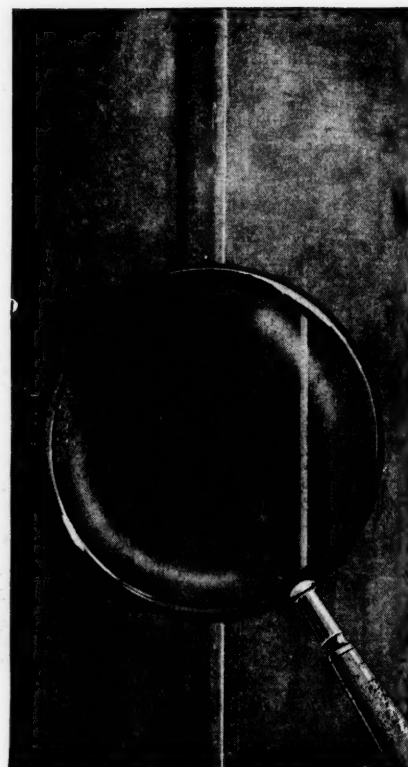
#### DISTRICT SALES OFFICES:

ATLANTA—Healey Bldg.	MINNEAPOLIS—Andrus Bldg.
BOSTON—80 Federal St.	NEW ORLEANS—Hibernia Bldg.
BUFFALO—Liberty Bank Bldg.	NEW YORK—30 Church St.
CHICAGO—Conway Bldg.	PITTSBURGH—Oliver Bldg.
CINCINNATI—Union Trust Bldg.	PHILADELPHIA—
CLEVELAND—Terminal Tower Bldg.	Franklin Trust Bldg.
DALLAS—Magnolia Bldg.	SAN FRANCISCO—
DENVER—Continental Oil Bldg.	55 New Montgomery St.
DETROIT—Fisher Bldg.	SEATTLE—Central Bldg.
KANSAS CITY, MO.—	ST. LOUIS—
Commerce Bldg.	525 Louderman Bldg.
LONDON REPRESENTATIVE—The Youngstown Steel Products Co., Dashwood House, Old Broad St., London, E. C., Eng.	YOUNGSTOWN—Stambaugh Bldg.

SAVE WITH STEEL

Visit the Youngstown Exhibit at the  
9th National Exposition of Power and  
Mechanical Engineering, December 1-6.

**YOUNGSTOWN**  
*Galvannealed*  
SHEETS







*Courtesy St. Louis Car Company*

# Steel takes a ride

**STREET CARS**—framed of steel, sheathed with steel; labor, time and money saved in construction—safety and protection provided those who ride them. A lifetime of service with minimum repairs—depreciation and fire hazard greatly reduced.

Granite City Steel is a material factor in keeping production costs down. The St. Louis Car Company, large users of Granite City Sheets and Plates,

report that it lends itself easily to fabrication; that its uniformly good finish takes an effective paint job without excessive preliminary labor. And the location of the Granite City Steel Company, 20 minutes from St. Louis, served by 29 railroads and the Mississippi River, assures prompt service particularly to the Mississippi Valley, the West and the Southwest.

Chicago • Dallas  
Kansas City  
Los Angeles  
Memphis



San Francisco  
Salt Lake City  
St. Louis  
St. Paul

**GRANITE CITY STEEL CO.** GRANITE CITY ILLINOIS  
Galvanized, Blue Annealed and Black Sheets • Plates and Tin Plate

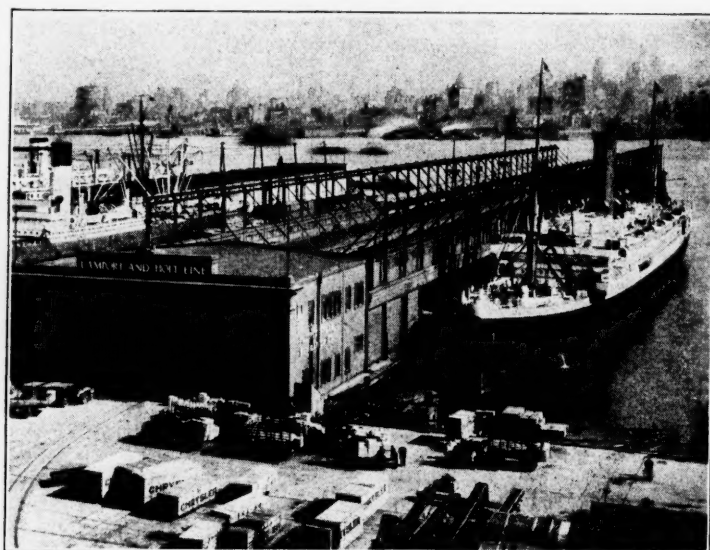
# ARMCO INGOT IRON

provides long-lasting low-cost  
weather  
protection

**Y**OUR plant buildings are sure to be adequately protected for years to come when you cover them with rust-resisting Armco INGOT IRON.

Fire hazard is lessened. Lightning cannot destroy, when the roofing is properly grounded. Insurance costs less. Even more important, the rust-resistance of pure iron assures exceptionally low cost per year of service. Armco INGOT IRON has behind it the longest record of actual service of any low-cost, rust-resisting sheets and plates.

There are several types of Armco INGOT IRON roofing. All are prac-



The Lamport & Holt Steamship Line is convinced that rust-resisting Armco INGOT IRON provides long-lasting, low-cost weather protection. Piers 14 and 15 at Hoboken, New Jersey, were sided with this durable iron in 1917 and 1922, and despite the constant threat of corrosive salt air and fumes, the sheets remained in uniformly excellent condition. Superintendent Davies is pleased with this splendid performance.

tical, easily applied, and durable. Ask the office nearest you to help you select the right type for your requirements.



**TUNE IN—**The Famous Armco Concert Band broadcasts every Thursday Night WLW—700 K—Cincinnati Nine to nine thirty E. S. T.



Back of this familiar symbol is nearly thirty years' experience in the manufacture of special analysis iron and steel sheets and plates. When you want a rust-resisting, low-cost metal be sure to see this triangle and the words, "Armco INGOT IRON." It is your assurance of dependable, economical service.



**THE AMERICAN ROLLING MILL COMPANY**

Executive Offices, Middletown, Ohio

Export: The ARMCO International Corporation

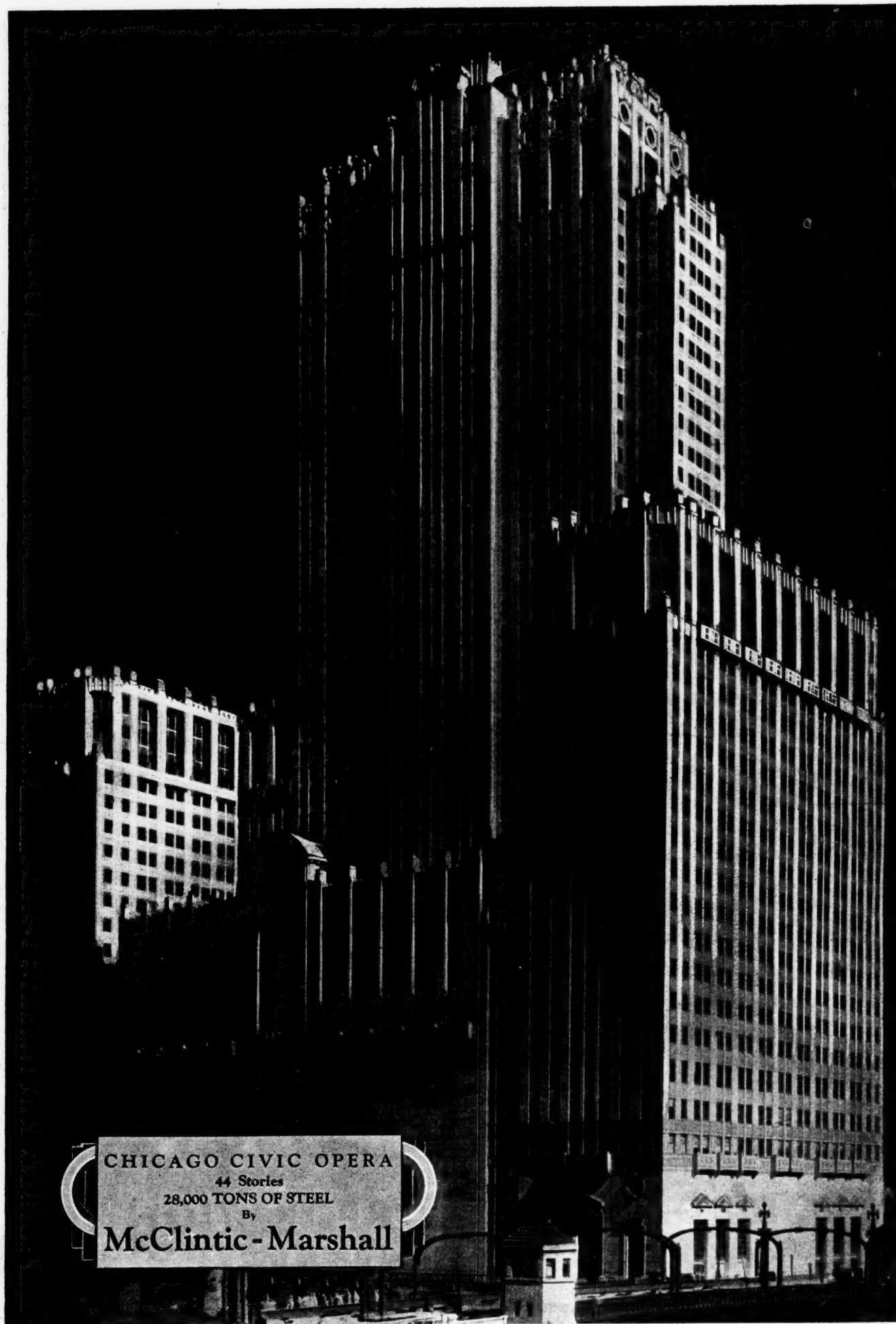
DISTRICT OFFICES:

Chicago  
Cincinnati  
Cleveland

Detroit  
New York  
Philadelphia

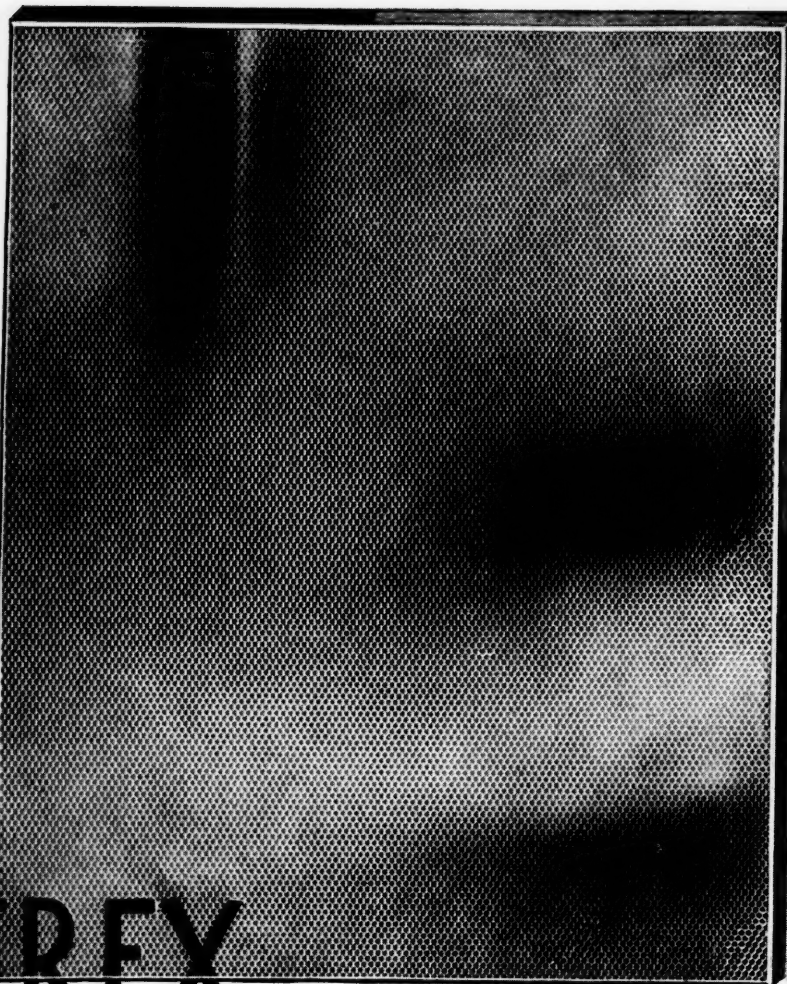
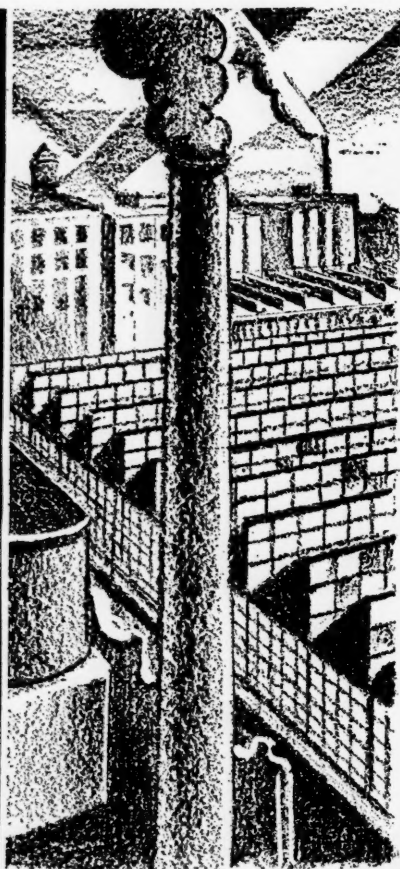
Pittsburgh  
St. Louis  
San Francisco

**"BE SURE IT'S MADE OF ARMCO INGOT IRON"**



CHICAGO CIVIC OPERA  
44 Stories  
28,000 TONS OF STEEL  
By  
McClintic - Marshall





# INDUSTREX

A BLUE RIDGE PATTERN

## ADEQUATE LIGHT

without glare and ease of cleaning are the two major industrial glazing problems which INDUSTREX is designed to solve. Small lenses, compactly arranged, provide uniform refraction of light. They form a comparatively smooth surface that does not accumulate dirt rapidly and can be cleaned with comparative ease.



## BLUE RIDGE GLASS CORPORATION KINGSPORT TENNESSEE

NEW YORK . . . 1 Madison Avenue • CHICAGO . . . 55 E. Washington Street

Pacific Slope Agents . . . GOODMAN & PAIGE . . . 1490-1494 Mission Street, San Francisco, California

# UP would go the batting average!

THE ball flashes from the pitcher's fingers. It's a curve, an in, an out-drop . . . it's high, or low, or wide . . . or it cuts the plate to be called a perfect strike unless it's hit.

In that fraction of a split second, just as the bat is swung, the batter's eye tells his brain and his brain tells his muscles the precise spot in space where his bat will find and squarely hit the ball. This fraction of a split second is what scientists call the *cognitive visual reaction time*.

When scientists tell us, then, after more than 40,000 observations, that the cognitive visual reaction time under COOPER HEWITT mercury-vapor illumination is more than 10 per cent faster than under daylight, other conditions being the same, we understand how a batter could more quickly see and more accurately bat if COOPER HEWITT light instead of daylight illuminated the ball field.

This, of course, is a mere supposition—for COOPER HEWITT mercury-vapor lamps are made especially for use in industrial plants. For such use, the faster cognitive reaction time under COOPER HEWITTs, small though it is, means that industrial workers see more quickly and sharply and perform their work more efficiently than they do under any other kind of light, including even daylight. And this is but one of several scientific reasons why COOPER HEWITT light is *better than daylight*.



Unlike ordinary artificial light or daylight, which is made up of all the different colors (or wave-lengths) of the rainbow, COOPER HEWITT light is composed *almost wholly* of the cool, yellow-green rays of the spectrum. These yellow-green rays, found *in the middle* of the spectrum, are those by which science says human eyes see best. The explanation of this is that in one direction from the middle of the spectrum light waves become heat waves, then radio waves, etc.; in the opposite direction they become ultraviolet, then X-rays, etc. Thus both directions from the yellow-green rays lead away from visual rays and into wave-lengths by which your eyes do not see at all.

Because of its peculiar spectrum, too, COOPER HEWITT light produces no eye-straining glare or dark shadows. It is as soft and cool as moonlight, yet it makes all objects under it stand out as if they were magnified. And, perfectly diffused from a long light source—a 50-inch tube—COOPER HEWITT light reaches in and around and under all parts of a machine. It does away with the need for drop lights.

Full information about COOPER HEWITT light is contained in an interesting new booklet—"Why COOPER HEWITT light is Better than Daylight." A complimentary copy awaits your request. Address: General Electric Vapor Lamp Co., Hoboken, N. J.

*The COOPER HEWITT spectrum shows that more than 90% of its luminosity is made up of the cool, yellow-green rays—the best-seeing light rays known to science.*

*Join us in the General Electric Hour, broadcast every Saturday evening, on a nation-wide N. B. C. network.*

GENERAL  ELECTRIC  
VAPOR LAMP COMPANY

(Formerly Cooper Hewitt Electric Company)

(See next page)

# Afraid of your shadow ? - why not ? you should be !



A workman stands over his machine. An improper source of light throws his shadow over the operation he is engaged on. Whether he is afraid of that shadow or not, he *should* be! For, to see clearly, he must step aside or otherwise take unnatural positions which eventually tire him and slow him down. Or else he must take the inevitable chances of letting poor materials or inaccurate work slip through. Sometimes even serious accidents result.

These are things for which workers are so often blamed, whereas the fault really lies with the kind of lighting system they are forced to work under. Dark shadows are caused both by improper and inadequate light. And workman should not be expected to work under such light. It nearly always means that his efficiency, on which he is constantly rated for pay and promotion, is impaired—through slowed-down work, through eye-strain, nerve-strain, sleepiness and so forth.

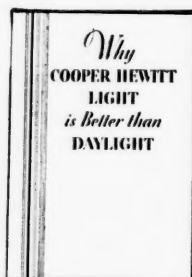
When, after the modern COOPER HEWITT mercury-vapor system of illumination has been installed in a plant, production is found to have increased from 10 to 15 per cent—as often happens—the reasons are not far to seek.

COOPER HEWITT light eliminates dark shadows and eye-straining glare. The long (50") tube of a COOPER HEWITT lamp affords almost perfect diffusion of light. It reaches in and around and under all parts of a machine so that all objects in the field of vision are sharply and clearly seen. It spreads illumination from such a wide angle that no workman under it can stand in his own light.

May we prove these and the many other advantages of COOPER HEWITT light by a 30-day trial installation in your plant? General Electric Vapor Lamp Company, 819 Adams St., Hoboken, N. J.



BETTER THAN DAYLIGHT



SEND today for your copy of this interesting booklet. It is a simple explanation of "Why COOPER HEWITT light is Better than Daylight." A post-card will bring it to you.

GENERAL  ELECTRIC  
VAPOR LAMP COMPANY

(Formerly Cooper Hewitt Electric Company)



# Its metallic pigment lengthens the time between paint jobs

Aluminum paint with a pigment of pure Alcoa Albron Powder gives you a longer lasting paint job. This paint will stay bright, will continue to protect wood, metal, concrete and plaster long after ordinary paints have deteriorated or peeled off.

The pigment is made up of minute, thin, flat flakes. When applied these flakes "leaf" to form a coat of metal protection. Retarding moisture penetration, it checks the formation of rust on metal—prevents the warping and checking of wood.

Used outside, aluminum paint will withstand the severest changes in temperature and weather.

Inside, aluminum paint improves lighting

conditions. Its silvery surface readily reflects light. You need less artificial light during daylight hours. You keep walls, ceilings and columns neater—more attractive. And you can readily wash this paint.

Aluminum Company of America does not sell paint. But aluminum paint made with satisfactory vehicles and Alcoa Albron Powder may be purchased from most reputable paint manufacturers, jobbers and dealers. Be sure the pigment portion is Alcoa Albron and is so designated.

Let us send you the booklet, "Aluminum Paint, the Coat of Metal Protection". Address ALUMINUM COMPANY of AMERICA; 2428 Oliver Building, PITTSBURGH, PENNSYLVANIA.

ALUMINUM PAINT—  
THE COAT OF  
METAL PROTECTION



ALCOA ALBRON  
POWDER FOR  
ALUMINUM PAINT



300,000-gallon ellipsoidal-bottom tank providing gravity water supply for waterworks system at Fayetteville, N. C.

B-186

## Waterworks Systems Decrease Operating Costs with Elevated Storage Capacity

Last summer cities in sections of the South suffered from the drouth. In some of them the waterworks system could not meet increased demand at peak load times.

Elevated tanks demonstrated their value in many waterworks systems at that time. They were filled as usual during the night and other times when the demand was small. Then at peak loads, when water was used faster than it could be pumped, the reserve in the tank flowed into the mains.

The improved service which elevated tanks render does not increase the operating costs of a waterworks system; in many cases the cost

of operation is actually reduced. With storage, pumps may be operated at a constant rate and greater efficiencies obtained. In small cities the entire needs of the day may be pumped in a few hours and the pumping equipment shut down for the rest of the time. Where electric power is used, pumping can be done at off-peak periods and power secured at a low rate.

Let our nearest office give you further information regarding the economies which can be obtained with elevated storage. Ask for a copy of our booklet entitled "Gravity Water Supply," or quotations on an installation for your city.

### Chicago Bridge & Iron Works

Birmingham.....1530 Fiftieth St. North  
Atlanta.....2145 Rhodes Haverly Bldg.  
Dallas.....3308 Magnolia Bldg.  
Houston.....1114 Electric Bldg.

Tulsa.....2411 Exchange Bank Bldg.  
New York.....3113 Hudson Terminal Bldg.  
Cleveland.....2216 Midland Bank Bldg.  
Chicago.....2106 Old Colony Bldg.

San Francisco.....1040 Rialto Bldg.  
Philadelphia.....1619 Jefferson Bldg.  
Detroit.....1510 Lafayette Bldg.  
Boston.....1510 Consolidated Gas Bldg.

# HORTON TANKS

# FLOORS WITH BACKBONE



Nature provided generously for Triceratops in the matter of backbone, dowered him lavishly with protective structure---designed him to endure. Endurance in floors is a matter of backbone too! Unprotected concrete or composition surfaces cannot stand up under the fast floor traffic of modern industry, the wear and tear, jolts and jars, without cracking, rutting, wearing away---requiring constant maintenance.

Floorgard was designed to give floors backbone, to prevent wear, to provide floors that stay put. It is easily and quickly installed to provide enduring surfaces for old or new floors. Full size sample of the material itself and illustrated catalog are yours for the asking.

*Just sign and mail the coupon.*



The BACKBONE OF  
THE FLOOR

# BLAW-K

BLAW-KNOX COMPANY

2024 Farmers Bank Bldg., Pittsburgh, Pa.

Send me a free sample and  
Catalog of BLAW-KNOX FLOORGARD

NAME .....

COMPANY .....

STREET .....

CITY .....

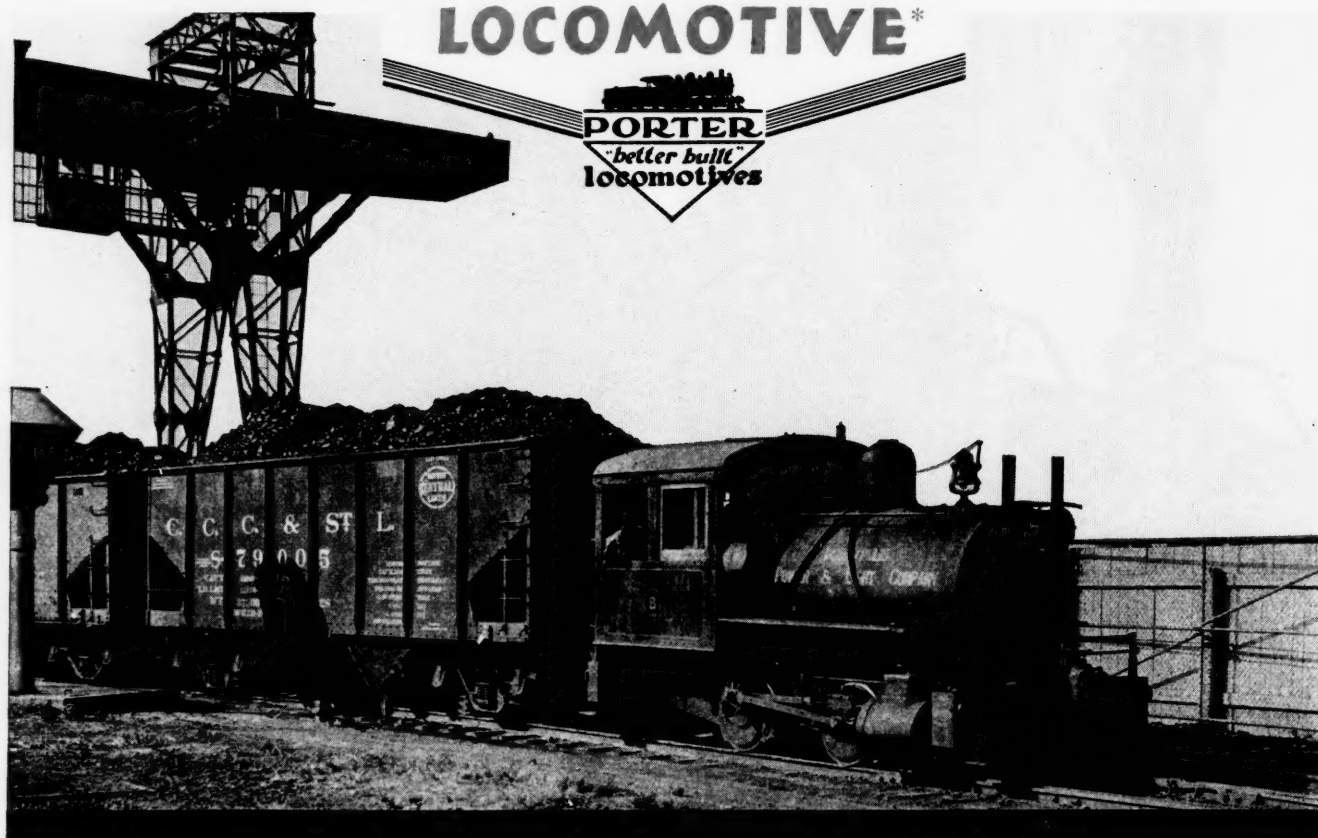
STATE .....

# KNOX



» » » Switching  
coal cars in a power  
plant *at a daily cost  
of only \$8.78 with a*  
**PORTER**  
*FIRELESS ... STEAM*  
**LOCOMOTIVE\***

**PORTER**  
*"beller bull"*  
locomotives



A remarkably low cost indeed, yet that is the certified record of a Porter Fireless Steam Locomotive in the Indianapolis Power and Light Company as determined by a Nielsen Survey in collaboration with the plant superintendent.

Consider further the fact that 16 cars of coal are hauled in and out of the plant at a cost of 55 cents per car or a trifle over *one cent per ton of coal*. Were this work done by the railroad company, a switching engine and crew would be required at an almost prohibitive cost.

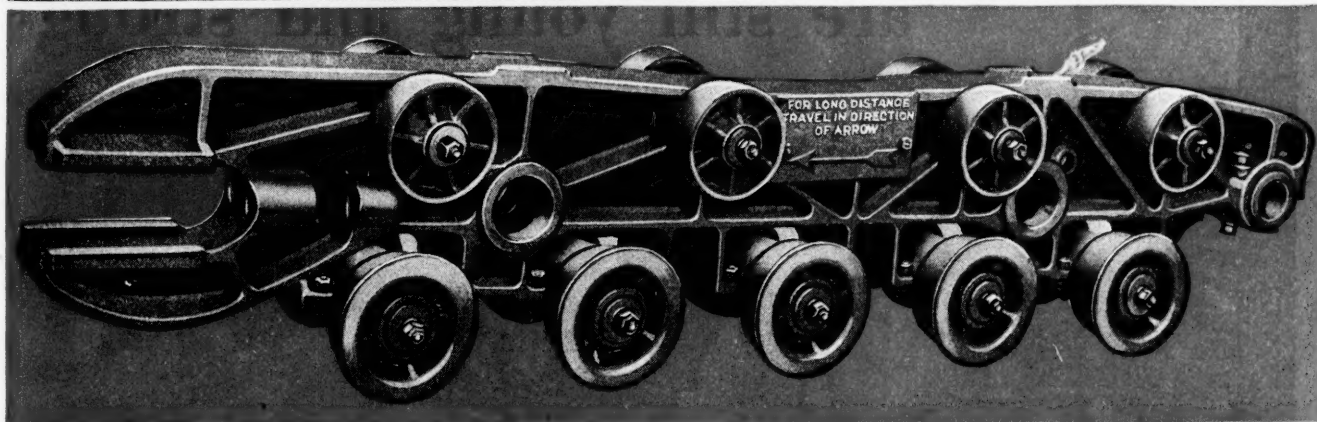
The Porter Fireless has unique advantages possessed by no other type of haulage unit. Learn the detailed facts—it may show you the possibilities of saving thousands of dollars in *your* plant.

**H. K. PORTER COMPANY**  
**PITTSBURGH, PA.**

New York Office: 44 Whitehall Street

Chicago Office: Engineering Building, Wells Street and Wacker Drive

\*Based on Certified Nielsen Survey



## The TRACTION FRAMES ARE SINGLE-PIECE STEEL CASTINGS

In line with the P & H principle of unit-cast steel construction, the traction frames of P & H Corduroy crawlers are single-piece steel castings. The whole simple crawler mechanism is held in permanent alignment by them. There can be no weaving . . . no excessive wear and breakage. Bearings and gears last longer.

Notice that the frame shown above is bored to receive the car body axles, which in turn are machined to fit. Thus there can be no play at these important points. For play here would soon seriously affect the operation of the entire machine.

These unit-cast steel Corduroy frames, together with the other unit-cast main frames, comprise one of the outstanding reasons for the great strength, long life and low maintenance of P & H Excavators

### HARNISCHFEGER CORPORATION

Established in 1884

4427 W. National Ave., Milwaukee, Wis.

Branch Offices: Atlanta, Baltimore, Birmingham, Memphis, Columbia, Dallas, Jacksonville, Kansas City, St. Louis.

Warehouses and Service Stations: Dallas, Jacksonville, Memphis.

#### AGENTS

Albuquerque, N. M. ....	R. L. Harrison Co.
Atlanta, Ga. ....	Yancey Bros.
Houston, Texas ....	R. B. Everett & Co.
Jacksonville, Fla. ....	Burgman Tractor-Equip. Co.
Miami, Fla. ....	McDonald Tractor-Equipment Co.
New Orleans, La. ....	Southern States Equipment Co.
St. Louis, Mo. ....	M. G. Hennessey Machinery Co.



# SHOVELS CRANES DRAGLINES

## In DETROIT . . .

91 year old *cast iron mains*  
are still young and strong



Photo by Fairchild Aerial Surveys, Inc.

**T**HE long life of cast iron pipe is attested by the official records of America's leading cities. For instance, Mr. F. H. Stephenson, Engineer of the Detroit Water Commissioners writes: "In 1853 the Secretary of the Detroit water system published a history of the Detroit water works... From a study of this history I find that in 1839 a 10-inch cast iron main was laid in Jefferson Avenue from Randolph Street to Woodward Avenue. *This main is still in service.*"

91 years under ground and still going strong! Certainly a splendid performance. But, it isn't a record for cast iron pipe. Philadelphia can point to cast iron mains still in service after 100 years. So can Richmond. So can St. Louis. In fact the full life span of cast iron pipe has yet to be measured.

The reason for the durability of cast iron pipe is its effective resistance to rust and corrosion. Water and gas mains of ferrous metal (iron and steel) with the exception of cast iron, disintegrate from rust. Cast iron pipe is the only ferrous metal pipe practicable for underground mains which rust will not destroy.

For complete information regarding the economy of specifying cast iron pipe for water, gas, sewers, culverts or industrial needs, write to Thomas F. Wolfe, Research Engineer, 309 Peoples Gas Building, Chicago, Illinois.

Cast iron pipe bearing the "Q-check" trade mark is obtainable from the following leading pipe founders: Alabama Pipe Company, Anniston, Ala.; American Cast Iron Pipe Company, Birmingham, Ala.; James B. Clow & Sons, 219 N. Talman Avenue, Chicago, Ill.; Donaldson Iron Company, Emaus, Pa.; Glamorgan Pipe and Foundry Company, Lynchburg, Va.; Lynchburg Foundry Company, Lynchburg, Va.; National Cast Iron Pipe Company, Birmingham, Ala.; United States Pipe and Foundry Company, Burlington, N. J.; Warren Foundry and Pipe Company, 11 Broadway, New York.



Look for the "Q-check" symbol stenciled in white as shown above. It is the registered trade mark of the Cast Iron Pipe Research Association

# CAST IRON PIPE





Reading 5-Point Pipe — the pipe that defies Time's onslaughts as does no other—protects Bullock's Wilshire Department Store, Los Angeles. John Parkinson and Donald B. Parkinson, architects.

## When 5-Point Pipe Goes IN Operating Costs Go DOWN

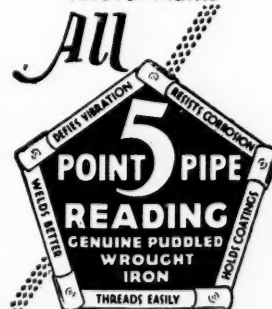
Slash off a goodly share of the operating costs of any building in which Reading 5-Point Pipe is installed. With this rust-resisting, longer-lasting pipe, you can definitely figure that pipe maintenance costs—an important item of operation—will be from one-third to one-half lower than ordinary pipe. That's why it pays to keep Reading 5-Point Pipe in your specifications, even when other items must be sacrificed.

Reading 5-Point Pipe is made by the country's largest manufacturer of *Genuine Puddled Wrought Iron*—the pipe material that defies Time—That Tough Old Tester. More than eighty years of use in the buildings and industries of the Nation prove that it lasts. Our nearest representative will gladly give you the profitable facts.

READING IRON COMPANY, Reading, Pennsylvania

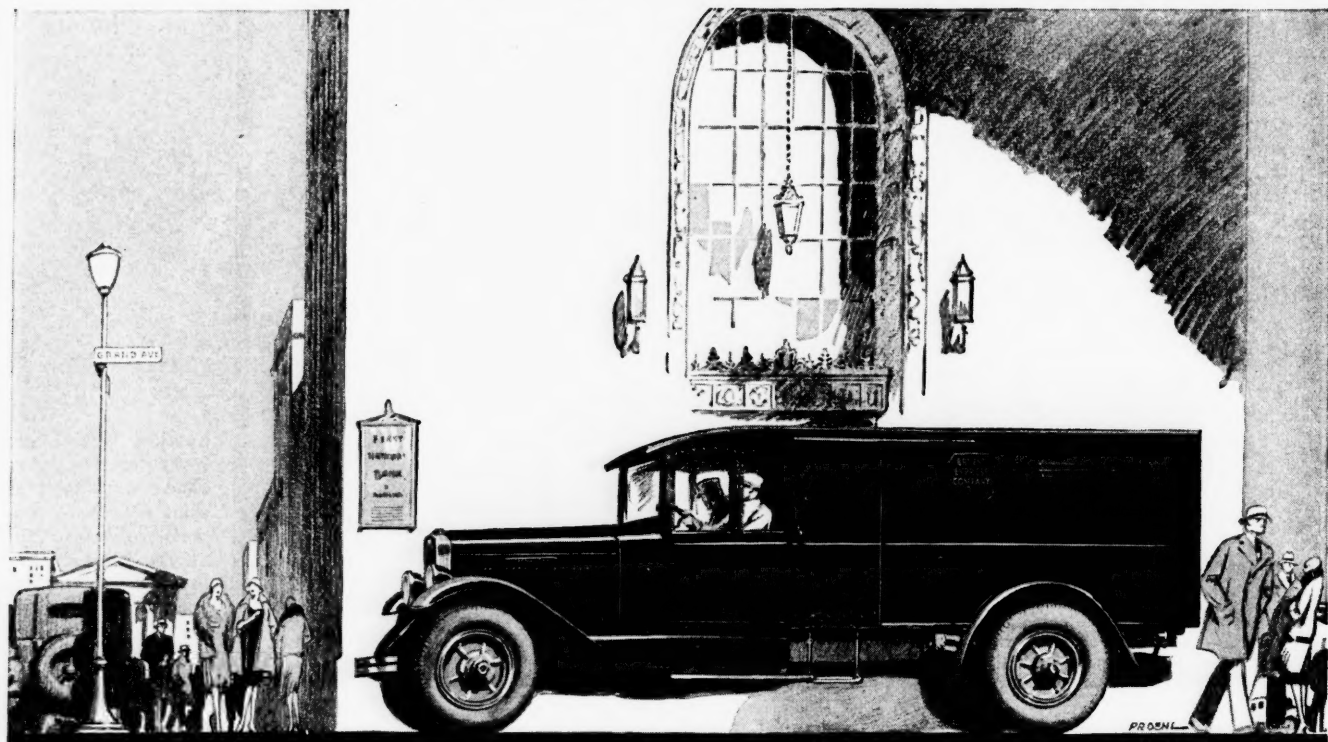
Use only Reading 5-Point Nipples with Reading 5-Point Pipe... you'll know them by the indented spiral band.

For Your Protection,  
This Indented Spiral  
Forever Marks



Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Wrought Iron

# Brink's have over 500 International Trucks in Service ...but not a Single Service Station



Brink's experience with trucks takes in many makes and many years. The result has been complete standardization on Internationals.



The complete NEW line of International Speed Trucks and Heavy-Duty Trucks is on view at Branch and Dealer Showrooms throughout the United States. Ask for a demonstration of any model at your convenience.

**H**ERE is a mammoth transportation company that has been enabled to hold down its investment in truck-service facilities to a minimum because of the outstanding service rendered by the company from which it buys its trucks—International Harvester.

Brink's Express Company owns a fleet of over 500 Internationals. They have branches in 78 of the largest cities. Their trucks serve these and 537 other cities and towns. Yet Brink's do only the emergency servicing themselves.

The bulk of this big service job is handled by International Harvester. From routine greasing to mechanical maintenance, the work is done by trained mechanics in our 161 Company-owned Branches.

Most of the work is done at night—for

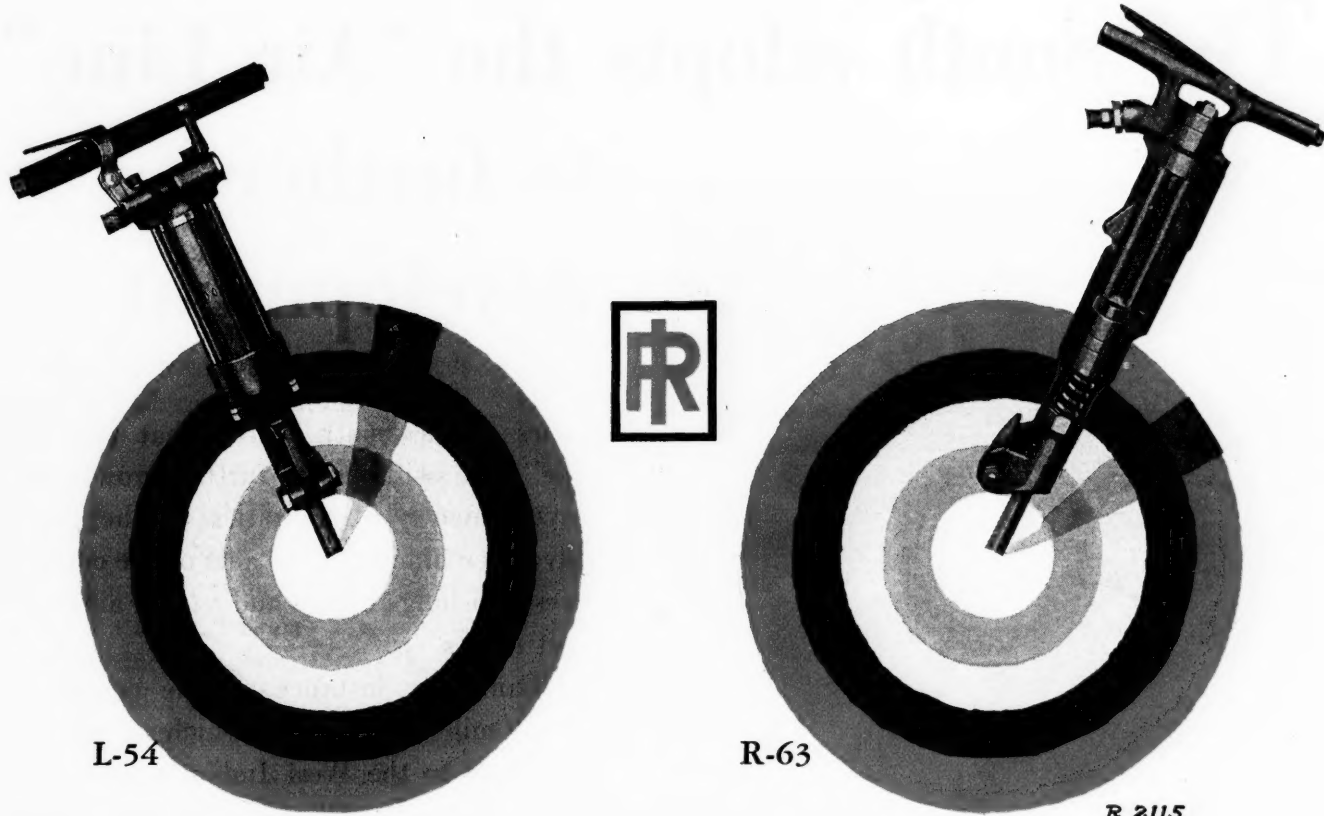
Brink's rigid schedules must not be interrupted. Brink's Express transports money—all the money in the world, you would think, for their annual volume in actual worth is nearly fifty billions of dollars.

Brink's Internationals have bodies of two thicknesses of steel, and windshields of bullet-proof glass. In every mechanical detail these trucks are built to provide the surest kind of transportation. They are so serviced that they go on providing it, for International Harvester has service wherever Brink's have trucks.

It is this unique "after-sale" service that has helped to give International Trucks their fame. Every user swears by it and so will you when you put your first International to work—and your five-hundredth!

INTERNATIONAL HARVESTER COMPANY  
606 S. Michigan Ave. OF AMERICA (INCORPORATED) Chicago, Illinois

# INTERNATIONAL TRUCKS



## Two New Paving Breakers Score 100% in the Contract Field

The new I-R Paving Breakers have caused a sensation in the contracting field. Though they were not placed on the market until July of this year, their acceptance by the trade has been phenomenal.

Wherever tried out, they have proved successful and have resulted in many repeat orders. Each machine has scored a bulls-eye.

The L-54 is a lightweight tool for demolition jobs, and is especially useful for horizontal work. It weighs 38 pounds.

The R-63 is particularly suitable for breaking up the hardest concrete, and is the easiest-holding Paving Breaker on the market. This tool weighs 80 pounds. Ask for Catalogue No. 4264.

INGERSOLL-RAND COMPANY • 11 Broadway • New York City

*Branches or distributors in principal cities the world over*

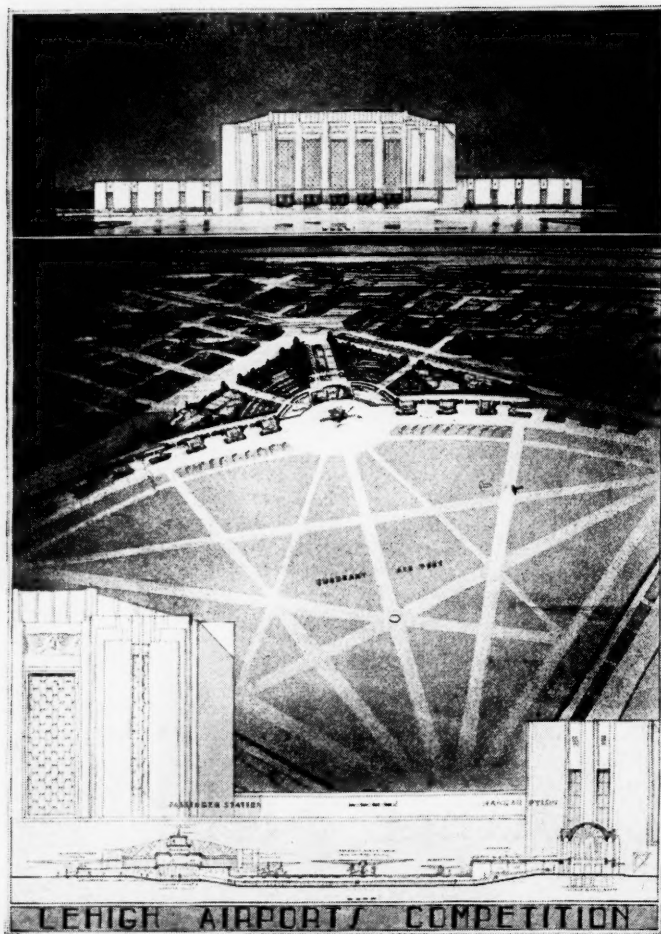
For Canada Refer—Canadian Ingersoll-Rand Co., Limited, 10 Phillips Square, Montreal, Quebec

14-PB

# Ingersoll-Rand



# The South adopts the "Air Line" to further development



First prize of \$5,000 was awarded to this design in the Lehigh Airports Competition. Conceived by A. C. Zimmerman and Wm. H. Harrison, Associated Architects and Engineers of Los Angeles, California.

## THE JURY'S DECISION

- FIRST PRIZE: A. C. Zimmerman and Wm. H. Harrison,  
Los Angeles, Cal. (jointly) . . . \$5,000  
SECOND PRIZE: C. Gifford Rich, Chicago, Ill. . . \$2,500  
THIRD PRIZE: Odd Nansen, East Orange, N. J., and Latham  
C. Squire, New York City (jointly) . . . \$1,000  
FOURTH PRIZE: Will Rice Amon, New York City . . \$500

### Honorable Mention—\$100 each

- W. Frank Bower, Jr., Henry L. Sandlass, Alfred A. Rothmann, jointly,  
of East Orange, N. J.  
H. Roy Kelley, Los Angeles, Cal.  
James S. Nussear, Jr., architect, and William N. S. Pugh, associate,  
Baltimore, Md.  
Edward C. Remson, New York City.  
George A. Robbins, Philadelphia, Pa.  
Robert Paul Schweikher, Denver, Col.  
Fred E. Sloan and Elmer A. Johnston, Chicago, Ill.  
Lloyd N. F. Spicer, Bayside, Long Island, N. Y.  
Edwin M. Stitt, Pittsburgh, Pa.  
Charles A. Stone, U. Floyd Ribble, jointly, Los Angeles, Cal.  
Robert D. Scott, Howard Hutchinson, Lansing C. Holden, Jr., jointly,  
New York City.  
Virgil Westbrook, San Clemente, Cal.

Cities of the South realize that the "air line" is a swift line to further growth and development. Many cities of the South have been among the leaders of the country in establishing airports and regular air transport routes.

Miami, for instance, is the center for 25,000 miles of air routes which are in daily operation to the West Indies, Central and South America. All over the South similar development is under way.

However, without adequate airports, no city can have adequate air transportation. The Lehigh Portland Cement Company realized this—and they realized also that little was known about the proper design and construction of airports. Here was an opportunity to contribute a service.

A competition for airport designs was held—open to all the architects, engineers and city planners in the country. \$10,200 in prize money was posted and the awards made by a distinguished jury.

We have published the prize-winning designs in a brochure entitled, "Highlights of the Lehigh Airports Competition." This will be most valuable to any community considering aerial development. It will be sent free upon request.

## Lehigh Portland Cement Company

Allentown, Pa.      Birmingham, Ala.      Chicago, Ill.  
Baltimore, Md.      Richmond, Va.



MILLS FROM COAST TO COAST

# Connect *your* distant Offices by Telephone Typewriter Service

TELEPHONE TYPEWRITER SERVICE speeds business and cuts operating costs. It transmits typewritten messages instantly between the separated divisions of an organization. It is quick, accurate and handles an unlimited flow of incoming and outgoing messages in a single business day. Orders are reproduced identically on duplicate printed forms. Inquiries are answered from a distant city the minute they arise. Routine is simplified and expensive duplication of operations eliminated.

A textile company has headquarters in Boston, sales offices in New York, a manufacturing plant at Biddeford, Maine, and a bleachery at Lewiston, Maine. Telephone Typewriter Service ties together the operation of all these units. An official writes: "Many transactions can be cleaned up on the same day that they arise, even if they concern several offices. A saving of 48 hours or more in the handling of orders is frequently effected."

A public service corporation uses Telephone Typewriter Service to connect its offices in three cities. General information and executive messages are exchanged.

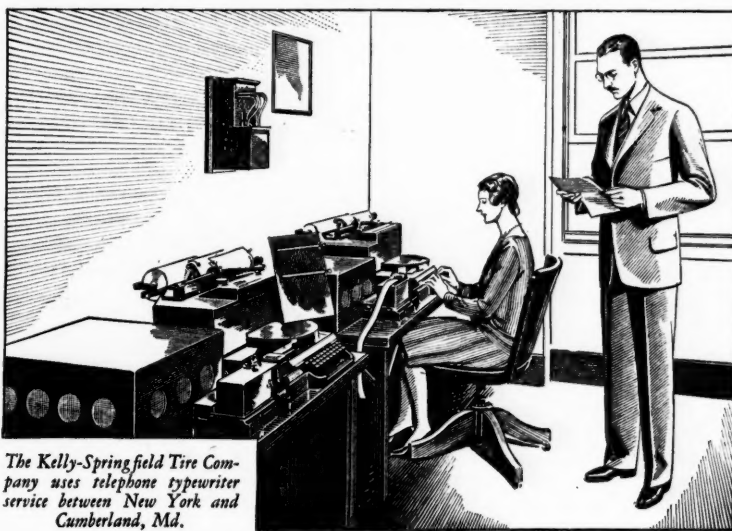
Your local Bell Telephone Business Office will gladly show you how this modern business aid can be of value to your company.



The New York office of the International Nickel Co., maintains constant contact with factories at Huntington, W. Va.



Nine outlying plants are connected with the Chicago office of the American Can Company by telephone typewriters.



The Kelly-Springfield Tire Company uses telephone typewriter service between New York and Cumberland, Md.



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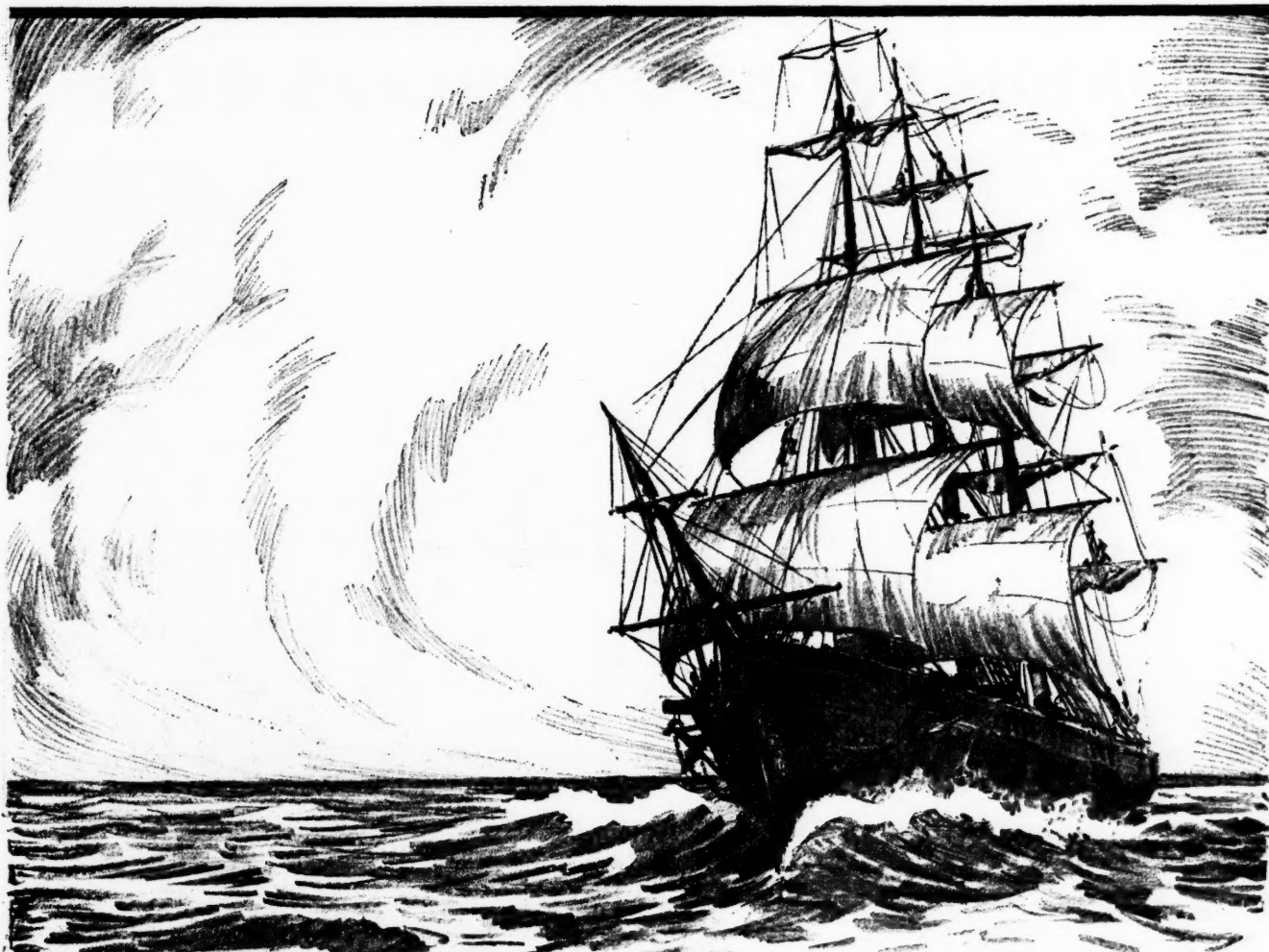
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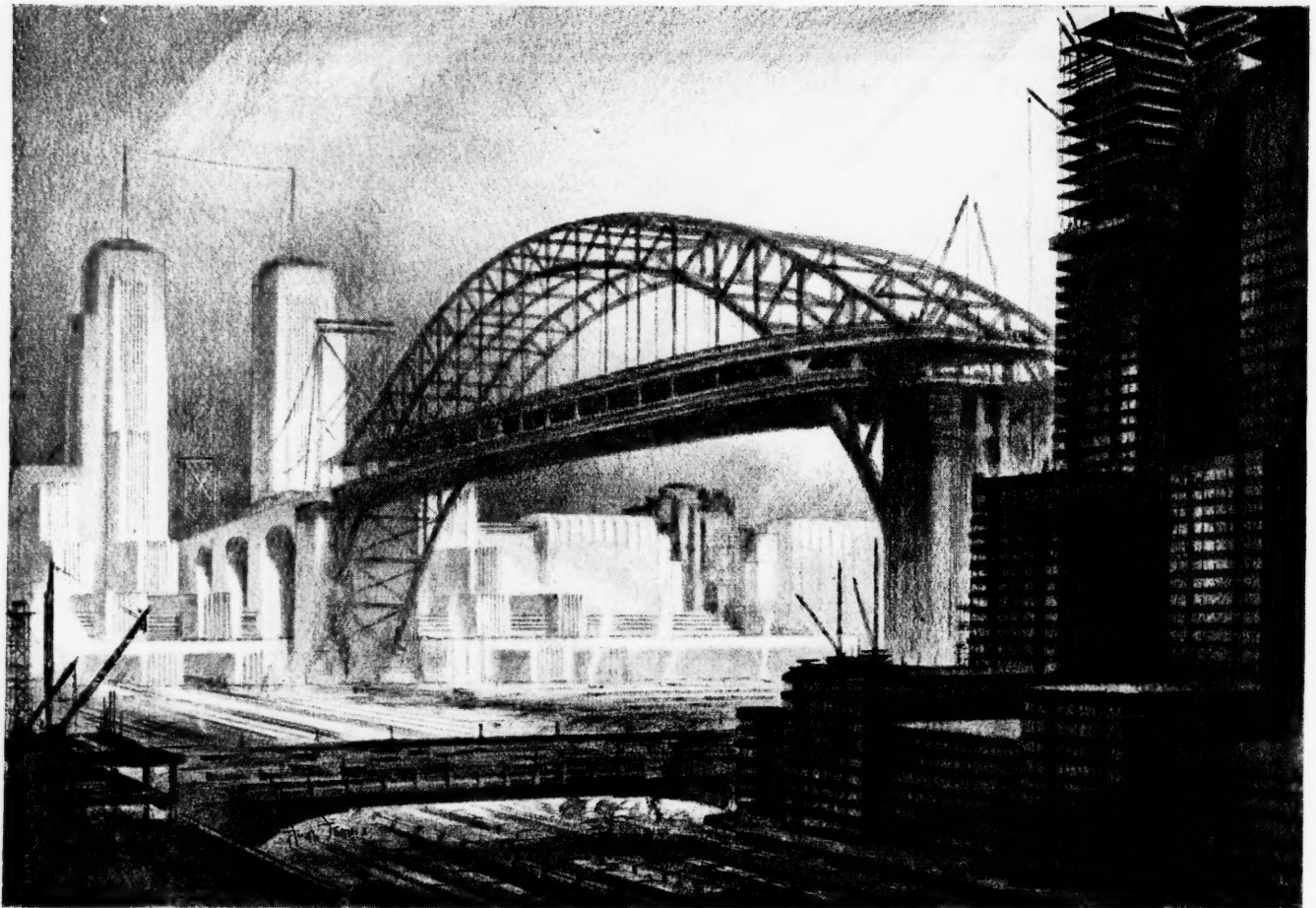
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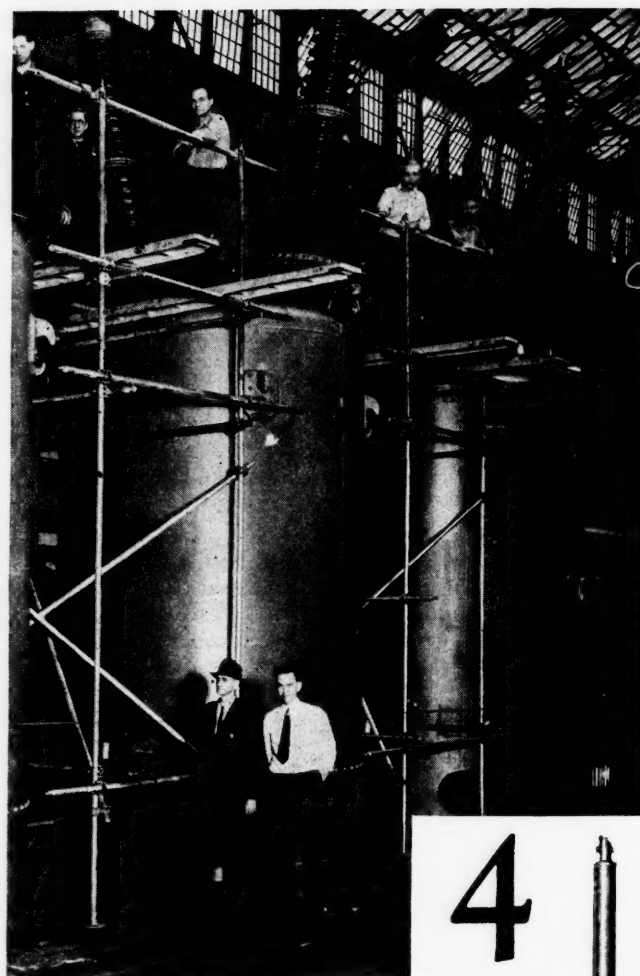
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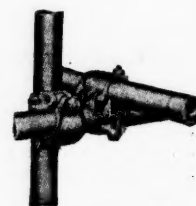
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# Manufacturers Record

Reg. U. S. Pat. Office

Devoted to the Upbuilding of the Nation Through the Development  
of the South and Southwest as the Nation's Greatest Material Asset

Vol. XCVIII No. 20 }  
Weekly }

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## "O, Ye of Little Faith!"

**W**E do not believe American business is cowardly. We do believe it has developed a pity complex. It seeks pity because of the drought, it seeks pity because trade has declined in many lines. It is seeking sympathy because it has not been able to match the record activity of 1929.

Now that the political campaign is over, there is no excuse for so much talk of hard times. As the Charlotte Observer well says:

"It is a safe proposition that if this were not a year of partisan politics, we would be hearing much less of hard times and unemployment, for political talk is largely responsible for keeping the public mind agitated and making people hold a tight grip on their purse strings, to the maintenance of a more or less condition of stagnation in trade. It would be interesting to know just how many people have been restrained from buying things they need because of the terror inspired by hard times talk. And prone we are to forget! Many people are led to believe that the conditions this year are the worst ever known. They fail to think back 20 years ago, when real hard times gripped the country, with no market for cotton and when merchants and manufacturing establishments over the country were forced to resort to payment of wages in 'scrip', when pay rolls were generally met by issuance of 'orders' on stores for merchandise."

It may be a shock to those "breeders of pessimism" to learn that many concerns today are going ahead of 1929. More than 50 of the country's largest corporations report earnings above the average, according to a selected list published by Printers' Ink. Some on this list are earning more this year than last. From its cross-section survey, "the reports suggested that perhaps old and tried policies, such as new products, better service to users, increased advertising and sales efforts work in bad times as well as in good." We are reminded that the "let's-wait-'till-things-get-better" attitude does not improve business—except possibly for the other fellow.

Compared with the inflation period, the present is not an occasion for rejoicing; but compared with panic periods of the past the present and passing lull seems almost inconsequential.

The expansion of business and finance caused by the war of 1812 came to a climax in a collapse in 1814 that lasted for several years. Other business depressions occurred in 1837 and in 1853, while in the crisis of 1873, following the Civil War, the liabilities of houses that failed aggregated \$228,000,000, a huge total for those times; for several years thereafter, the failures exceeded \$150,000,000 annually. Later, business again became more stable, to become unsettled by the panic of 1893. In the crisis of 1907-08,

which occurred at a time of general national prosperity, 17 banks in New York and 54 elsewhere suspended wholly or in part; banks in all sections of the country were subjected to runs by timid depositors. Twenty-three cities were forced to use clearinghouse certificates, and as much as \$100,000,000 was sent from New York for relief of interior cities, while business failures were widespread. The breadlines and soup kitchens just prior to the World War outbreak in 1914 are more easily remembered than forgotten; while the orgy of inflation in 1920, due to post-war conditions, was setting the stage for several minor depressions, culminating in the stock market crash of last fall.

In contrast to the major crises mentioned, this passing depression has had few if any major failures in financial or business circles. The Federal Reserve System has been a bulwark to the nation's banking stability. Public work in construction activities of many kinds has been undertaken to relieve unemployment, and leaders of private industry in many lines have arranged programs to keep labor engaged at satisfactory remuneration. As far as possible, working men and women have been protected, instead of being made the first and heaviest sufferers. Business has learned that it is best to maintain the wage scale and a relatively high standard of living.

Due to the inherent soundness of America's economic structure and to the practical measures adopted by the Government and private industry, business failures and individual suffering have been kept down to a minimum. The involuntarily unemployed total of the national population is reliably estimated at less than three per cent. The people at large actually have been increasing their savings bank deposits. More than 25,000,000 automobiles, out of 32,000,000 in all the world, still run over American roads. The American people, only seven per cent of the world's population, continue to use 42 per cent of the world's pig iron; most of its copper; 69 per cent of the crude petroleum; 36 per cent of the coal; and 56 per cent of the crude rubber, to cite only a few major basic products.

Abroad, destitution and the dole prevail in many lands. Labor is grateful for pittance pay. Strikes are numerous. Business depression and domestic unhappiness are widespread and revolution stalks through several countries.

There has been too much talk of hard times in the

United States. The American people have enjoyed and are even now enjoying comforts and conveniences and luxuries beyond the dreams of any nation in all past history.

In the coming revival of business, we will witness many changes in the manufacture and distribution of basic products. The food industry has already been affected by the commercial success of processing methods, the quick-freezing of fruits and vegetables. New textile products, such as rayon, have been perfected. Cotton textiles have been turned to industrial uses, among them the building of roads, building material and the making of mechanical appliances. The lumber industry has seen the growing competition of fabricated building materials made from by-products of sugar cane and other fibres. In this new business revival, chemistry will play an important part through direct utilization of by-products of coal, petroleum and farm crops. Much progress in this direction has already been made in the petroleum industry and it will not be long before coal will furnish the raw material for other new industries which likely will be established at or near the mine. We have been witnessing in the past 18 months a great expansion of natural gas pipe lines. Those lines radiating from the gas fields of the Southwest, in all likelihood will be tied into super gas systems and, with the further development of super electric-power systems now in existence, will form heating and power resources with a far-reaching effect upon industry and on the regions through which these lines will pass.

We have experienced a revolutionary change in transportation. The automobile, the motorbus, the motor truck and airplane have entered into competition with the railroad and the steamship for both long and short hauls. The railroads themselves are expanding facilities through acquisition of bus and truck lines, and are becoming affiliated with air lines.

This trend toward the creation and distribution of new products cannot fail to bring about further industrial progress. Business is on the threshold of a new expansion which already is being mapped out by research and invention.

### Improved Business

**O.** J. TIMBERMAN of the Eagle-Picher Lead Company, Joplin, Mo., in referring to the "inspiring editorials" appearing in the MANUFACTURERS RECORD, makes a statement which perhaps should be of interest to other industries. In discussing the business depression, of which Mr. Timberman says his company has had its share, he contends that the worst is over and asserts:

"Our business has shown much improvement in the last 60 days and this improvement is reflected in our plant payrolls."

Increased payrolls in various industries will mean that before long general business will benefit, for after all it is a community's dependable payroll resources which control prosperity.

### Georgia Launches a New Industry

**F**RESH tree-ripened Georgia peaches, picked last summer, will be served this winter on the tables of the discriminating. The commercial success of two quick-freezing plants established in Georgia has made this possible. And these plants, the first established anywhere, should be the forerunners of a large industry for the South, the freezing of fruits and vegetables.

As an article published elsewhere in this issue shows, the industry has become well established in some lines; that is, in the processing of berries and fish, but the freezing of peaches was not commercially successful until last summer.

This winter the frozen foods industry will be launched in Florida by the establishment of plants for freezing and distributing orange and grapefruit juice.

The Georgia Experiment Station located at Experiment, Ga., near Griffin, has been working since 1925 on methods for the preservation of fruit by freezing. Results of this research on peaches have been published in a bulletin, "Preserving Fruits by Freezing," compiled by J. G. Woodroof, Department of Horticulture. Tests are being made also on a wide range of fruits and vegetables, and reports on these will appear in future announcements by the Station. The bulletin on the freezing of peaches is comprehensive in treatment, covering every stage of the process from harvesting to preparation and marketing. It is a most important contribution to the development of those new industries which depend upon agriculture for raw materials. We are advised that it will be furnished free upon request to residents of Georgia; as a matter of fact, everyone interested in furthering the development of Southern agriculture could with profit study the material presented.

Acknowledgement is made to cooperating agencies in experimental work conducted by the Georgia Experiment Station, of which H. P. Stuckey is director. Individuals and concerns assisting in the experiment are given in the bulletin as follows:

"W. T. Comer, of the Crystal Carbonic Laboratories, Atlanta, furnished his personal assistance and special freezing equipment of his own design. J. M. Mallory, general industrial agent, made it possible for the Central of Georgia Railroad to furnish free transportation of frozen samples of fruits. The Pomona Products Company of Griffin, Ga., and the Polar Products Company of Monticello are cooperating in the general project of experimental freezing of fruits. Tom Huston Frozen Foods, Inc., of Columbus, gave cooperation through its commercial plant located at Montezuma, Ga. The Atlantic Ice and Coal Company, of Atlanta, donated storage space for experimental frozen fruits.

"The Mono Service Company, Newark, N. J.; the American Can Company, Maywood, Ill.; the Owen-Illinois Bottle Company, Toledo, Ohio; the Aluminum Company of America, Atlanta; the Paterson Parchment Paper Company, Passaic, N. J.; Du Pont Cellophane Company, Inc., New York; and the Capstan Glass Company, Connellsville, Pa., are cooperating in the study of containers for frozen fruits.

"The Dry Ice Corporation of America, Atlanta, offered 'dry ice' for experimental purposes. The Sprague-Sells Corporation, Chicago, furnished a slicer and peeler for experimental purposes."

This newest of Georgia industries requires equipment that is supplied by many other industries, thus indicating that, as new plants are established, not



only will the farmer benefit, but other lines will benefit also.

In a statement to the MANUFACTURERS RECORD on the progress made in the freezing of Georgia peaches, J. M. Mallory, referring to the two commercial plants built in Georgia this year, states that their combined output was about 40 cars. The product was distributed in the principal cities, and frozen peaches are now being served in hotels and restaurants and in private homes. A normal peach crop in Georgia is between 15,000 and 20,000 cars. Sometimes the ripening of the different varieties overlaps, resulting in glutting the markets and the loss of several hundred cars of fruit.

Mr. Mallory points out that when peaches are prepared by the quick-freezing method, tree-ripened fruit is used, the fruit retaining its original delicious flavor. The Georgia Experiment Station and the producing plants are stated to be gratified and encouraged over their success with this year's product, and Mr. Mallory hopes that in two or three years it will be possible to market several hundred cars of peaches that otherwise would go to waste.

There also is the possibility of developing a foreign market for frozen fruit. Some fresh fruit has been shipped to Cuba and England. Five years ago, in London, Mr. Mallory made a study of the English market and learned that Great Britain imports large quantities of peaches from South Africa, South America and France, and a small quantity from the United States. With the development of the frozen fruit business, the South should get a fair share of this profitable trade.

The MANUFACTURERS RECORD for some time has followed with sympathetic interest the work of those whose pioneer efforts have now resulted in the establishment of a new industry. It here extends its congratulations on the progress made. Beyond doubt another successful industry is to be added to Georgia and to the South.

### White Paper From Slash Pine

**A** NOTHER new industry for the South is in sight. Through chemical research, the pine forests of the South are destined to become yet more valuable by supplying raw materials for the development of cellulose-using factories. Within the past decade we have witnessed an evolution in Southern lumber manufacturing in the development of by-products and the establishment of pulp and kraft paper mills.

Now, according to Dr. Charles H. Herty, there is ample evidence that white paper can be made successfully from slash pine, and further experiments with long leaf pine are under way.

The progress thus being made opens up the whole question of the practically inexhaustible supply of cellulose which can be produced from trees and vegetative plants found in the Southern states.

In the MANUFACTURERS RECORD this week George M. Rommel outlines a few basic facts which lead to

the prediction that a cellulose age is dawning that will bring about an industrial development of major importance for the South. Much of the South's wealth now comes from cellulose in various forms—cotton, paper and lumber. Through applied science, chemical research and invention this cellulose will be purified and form the base for the development of other lines of manufacturing.

### A Period of Political Peace Impends

**N**OW that the national political campaign has been closed by the recent election, the thought of the people concentrates again on their individual and national business affairs. As the clouds and the dust and the turmoil subside, they will view the present in more cheerful light and see more clearly into the future.

Primarily, industry and business have no discernible cause to fear radical or disturbing congressional legislation within a year, and each day of delay will diminish the danger of such legislation. The present Congress, considered conservative, will operate until March 4, next, and the new Congress, which gives no sign of so-called radicalism, does not convene till December 7, 1931, unless a special session unexpectedly be called. The heretofore disturbing tariff factor is minimized through the power and operation of the Tariff Commission. Radical farm legislation, as in the debenture idea, will not come to a head within a year. Action affecting the Federal Reserve system or the stock exchanges will be restricted to preliminary investigations by a Senate committee. Other similar possibilities for congressional action also will be held in abeyance. A period of political peace impends.

The greatest rivalry between the two leading political parties, the MANUFACTURERS RECORD is pleased to believe, is based on ambition to be of service to the United States. More and more, they tend to concerted action toward this end. National policies of great moment are weighed on the scales of public interest, rather than partisan advantage. Happily for the country, all men are not of one mind, but a sound minority continues an invaluable factor.

The people now can go about their business without fear of harmful national legislation. They have relieved their feelings in the voting booth, and now can be counted on to concentrate their energies on the revival of American business.

### Advice From a Successful Farmer

**A**N Arkansas farmer, who spends his winters in California, writes the MANUFACTURERS RECORD: "I am 'danged' tired of this farm relief talk and 'bank service.' The slogan of the whole country should be: 'Borrow less, save more.'"

It is reasonable to assume that this successful Southern farmer did not look to the Government or others for help.



# The "Cellulose Age" Dawns in the South

By

GEORGE M. ROMMEL,  
Industrial Commissioner,  
The Industrial Committee of  
Savannah, Ga.

**N**O other section of the United States surpasses the Southern States in the production of cellulose; few states can equal the South in this respect.

No other constituent of vegetative plants costs less than cellulose. From the water in the soil and the carbon dioxide of the air, this complex chemical compound is produced in the plant cells by the energy in sunlight. No matter what the weather may be—let rainfall be scanty to the point of burning drought—if there is moisture enough in the soil to germinate seed, cellulose certainly will be produced. One always can "make a crop."

Much of the South's wealth comes from cellulose—cotton, paper and lumber; all cellulose in one form or another, in varying degrees of purity. An enumeration of things already made of cellulose would fill a page or more of this magazine, but these are only the forerunner of development which will follow successful completion of the work on which chemists are now engaged: To learn the secret of how the plant takes the raw materials (water and carbon dioxide), transforms them into glucose and from glucose makes the final product, cellulose.

Chemists maintain, and business men supporting them believe, that the cellulose industries will yield to no group in the magnitude of their progress during the next two decades. We are on the threshold of the "Cellulose Age." When we reach that time, the South will see an unparalleled industrial development, in which land owners, labor and manufacturers will share. It may even happen that new uses for the cotton crop will materially lessen or even remove entirely the burden of crop surpluses. There even may be such complete utilization of the products of the Southern forests that there will no longer be idle lands, but all acres which will grow trees will be producing their crops in season with profit to the owners.

## New Products—New Uses

The application of chemistry has not yet had a great effect on the cotton industry as a whole and only a small part of the crop of cotton fiber goes into any form of chemical manufacture. Cotton is a textile industry, and it may always remain so, but one must not be dogmatic about it in the face of this upsetting science of chemistry. As we advance further into the cellulose age, who knows what new uses may be found for cotton lint? Chemical engineering has done quite as remarkable things in other lines. Sugar-cane bagasse prom-

ises to become a source of fine paper. The use of sawmill waste and low-grade wood for the manufacture of perfect lumber as well as insulating board may in time bring about more production of building material in the South than has ever been known in the past.

The key to problems involved lies in the field of what is called pure science, because, until chemists know the composition of the cellulose molecule, they are working in the darkroom instead of in the light of the laboratory. And, with the microscope, the X-ray and other methods of chemical analysis, chemists are approaching the realization of their efforts: The answer to the question, What is cellulose?

## What Is Cellulose?

Under the microscope, Ritter of the United States Forest Products Laboratory in Wisconsin has separated wood fibers into fibriles, then into minute spindle-shaped objects which he calls "fusiform bodies" and now he can reduce these fusiform bodies into still more minute round forms which he designates "spherical bodies." He is hunting for the smallest particles in which pure cellulose is found in nature. Other chemists are adding to the information available. Also, Hibbert of McGill University at Montreal is making marked contributions to the pure chemistry of the subject, in the effort to determine how glucose in the plant cell is changed (synthesized) into cellulose.

It appears to be agreed by the best authorities that cellulose is cellulose, whether it comes from cotton fiber, sugar-cane bagasse, wood or the host of vegetative plants which produce it in such dazzling plenty. When chemists know just what it is and how the plant makes it, then we shall indeed enter the portals of the cellulose age. Let your imaginations run a bit, remember what happened when chemists learned the molecular composition of coal-tar, and you will get a faint conception of the possibilities of cellulose chemical manufacture, once its chemical structure is known.

## Inexhaustible Raw Material

As an industrial raw material, cellulose truly is as inexhaustible as sunlight. In the South, rainfall, temperature and evenly distributed sunshine give the ideal combination for cellulose

production. It was in the South that a prophet of his generation, the late W. H. Sullivan of Bogalusa, La., conceived and carried into reality the first permanent sawmill town in the United States. But Sullivan would have had hard sledding without the auxiliary of chemistry as it was applied in the paper mill which became such a splendid adjunct to his logging and sawmill operations and enabled him to make a more complete utilization of the output of his company's forests.

Already the South is making a marked impression on the paper industry, and the census of manufactures shows that 38 per cent of all kraft paper produced in the United States in 1927 came from Southern mills, and there has been a large increase in Southern plant capacity since that year. Among the hardwoods, poplar, chestnut and other varieties have long been used for paper. Now, black gum, a wood which really is very white, lends itself well to paper-pulp manufacture by the sulphite and soda processes, which projects it into the least overdone field in the paper industry.

## Southern Pine for Paper

But the great appeal comes from Southern pines. Time was, when the entire coastal plain was blanketed with a virgin stand of these glorious trees, whose only contribution to commerce then was turpentine and rosin. Then came the lumberman, who systematically harvested them as rapidly as possible, erroneously thinking that the ranchman and the farmer would follow the logger. Now, we know that these coastal lands will often yield more return through growing pine trees than in any other crop, and we are cheerfully, enthusiastically and systematically going at the job of bringing them back into productive timber, keeping fire out, letting nature reseed the land with young trees, thinning to get maximum growth, or even planting in wholesale quantities—which costs more at first but makes early thinning unnecessary.

Pine trees produce the wood used in the kraft paper industry of the South. Thus far they have not been regarded as suitable for production of other kinds of paper, because the wood was found to be resinous and the pulp difficult to bleach. Dr. Charles H. Hertig of New York, inventor of the turpentine cup, amazed the paper men two years ago when he showed that the sapwood of Southern pines, especially that of slash pine, contains no more resin than is found in Northern white pine and spruce. He also showed that heart-

wood does not begin to form in these pines until the trees are 20 to 25 years old, when they are even beyond the desirable pulpwood size if they have been protected from fire. Herty maintained that the resinous heartwood had led paper makers and chemists astray in their conceptions of the value of Southern pine wood for paper production. The wood used in Southern paper mills and that which had been analyzed by paper chemists was run-of-the-woods stuff, with lots of heart in it. Nobody realized that there was any particular commercial importance in pine trees that are all sapwood and few believed that a Southern pine tree doesn't produce heartwood until about 20 years of age.

#### *White Paper From Slash Pine*

Herty insisted that rapidly-grown young slash pine, containing no heartwood at all and therefore very little resin, gives an entirely new paper-making material. Was there then any fundamental reason, he suggested, why the wood of young slash and other Southern pines—all sapwood—could not be used for making any kind of paper—newsprint, book or anything else? So, at a luncheon meeting of the Atlanta Chamber of Commerce, on October 29, he showed samples of good white paper, made in a papermill from slash pine sapwood. By a simple device, the chips from which this paper was made were placed in a digester with other wood being cooked by the sulphite process. The pulp from the sap pine was satisfactory, and required no more bleach than did pulp from Canadian spruce made in the same mill at the same time. These were not laboratory tests; they were mill tests which were carried through under common plant practice.

The next step was to see if the most bulky component of newsprint, groundwood (or mechanical) pulp, could be produced from slash-pine sapwood. It was done under Dr. Herty's direction and the product was pronounced good pulp for paper purposes. Herty then suggested that newspapers in the South might make provisional contracts for pine sapwood newsprint at a satisfactory price, in order to try this new product out as a practical business proposition.

These results are pioneering steps toward a development which may change the geography of the entire paper-making industry in America; even though the further movement of the paper industry into the South may be deprecated today, just as were the Southern steel and textile industries in their early beginnings years ago.

Pulpwood can be produced with Southern pines in 10 to 15 years, as against 30 to 80 years with Northern

spruce, which yields no other return, while two species of Southern pine, slash pine and longleaf, will yield a revenue from naval stores as well as from pulpwood, with saw timber by the time the Northern trees are pulpwood size. In the meantime, while the Southern paper manufacturer waits for his timberlands to pass from the present cut-over, burned-over stage to the revenue-producing stage, he can buy all the wood he needs for his papermill from nearby farmers and small land owners, at less than half the cost of wood at Northern mills. At the most, \$6 per cord is the cost of Southern pine pulpwood, f. o. b. mill, as against an average of \$12 to \$18 for pulpwood at Northern mills. And two cords of wood are required for each ton of paper.

We protagonists of a Southern paper industry are not "kidding ourselves." We are simply setting up certain stubborn facts where all may see. The effectiveness of thorough research on Celotex and Masonite and Presdwood should stimulate us to tackle the study of Southern pines for pulp and paper production with equal determination. It should be comparatively simple to get the necessary funds. A difference of more than \$10 a ton on raw material costs in making a finished product which sells for less than \$100 a ton f. o. b. mill is tremendous inspiration to profitable investment.

#### **\$1,000,000 Water Line Completed**

Toyah, Tex.—A 12-inch water supply line has been completed by the Texas & Pacific Railway Co. from McCutcheon Springs in the Davis Mountains, 38 miles, to Toyah, at a cost of approximately \$1,000,000. In addition to supplying water for the railroad, whose requirements will be 200,000 gallons daily, the line will supply the town for domestic purposes. Negotiations are now pending for extending the line from Toyah to Pecos, a distance of 20 miles.

#### **\$6,000,000 to Straighten Rio Grande River**

El Paso, Tex.—Plans for straightening the course of the Rio Grande River near El Paso, thereby shortening the channel by approximately 80 miles, are in a formative stage, according to L. M. Lawson, this city, of the international boundary commission, United States and Mexico, who sees no reason why negotiations with Mexico should not be carried to a logical conclusion and the work started. The course of the river where it would be straightened is about 150 miles long and the cost of the project is estimated at \$6,000,000.

#### **\$80,000,000 FOR PUBLIC WORK**

##### **Louisiana Voters Adopt Constitutional Amendment Providing Funds for Important Construction**

Baton Rouge, La.—Eight amendments to the State constitution, approved by the voters of Louisiana on November 4, will make possible the issuance of bonds totaling more than \$80,000,000 for public improvements. Other amendments provide additional school funds and funds for the improvement of the ports at New Orleans and Lake Charles. Of the eight amendments voted, No. 1 authorizes the issuance of \$75,000,000 of bonds for roads and bridges, to be levied against the existing 4-cent gasoline tax, setting aside \$7,000,000 for defraying a part of the cost of a railroad and vehicular bridge across the Mississippi River at New Orleans, estimated to cost ultimately from \$18,000,000 to \$21,000,000, and \$8,000,000 for important bridges in other sections of the state. Amendment No. 2 provides for levies and an additional gasoline tax, expected to yield \$1,800,000 a year, setting aside one-half the tax for an equalizing fund to be distributed by the State Department of Education and 10 per cent of the other half to the port of Lake Charles and the remainder to the port of New Orleans. No. 3 amendment authorizes the issuance of \$5,000,000 bonds to erect and equip a new state capitol at Baton Rouge, while amendment No. 4 authorizes parishes and municipalities to exempt new industries from taxation for a period of 5 years. By amendment No. 5, the Orleans Levee Board is authorized to issue \$1,000,000 bonds to build an airport on Lake Pontchartrain, and by amendment No. 6 the city of New Orleans is authorized to issue \$4,500,000 of bonds, applying \$3,500,000 to retire outstanding indebtedness and \$1,000,000 to construct parks. Amendment No. 7 directs future legislatures of the state to provide \$12 per educable child for distribution by the State Board of Education to the parishes, thus increasing state aid for schools by about 50 per cent, and amendment No. 8 increases from \$30 to \$60 monthly pensions paid by the state to Confederate veterans.

#### **\$500,000 Building Addition**

Tulsa, Okla.—Plans will be completed within three weeks for a \$500,000 addition to the Philcade Building here of the Phillips Petroleum Co., involving four additional typical office floors. Already a 9-story structure, the additional floors will bring it to 13 stories, with a portion of the 14th story erected.



# Frozen Foods a Fast Growing Industry

By

ALBERT W. LUHRS,  
Director of Research,  
Paperboard Industries Association,  
New York

**D**URING the past 30 years, the freezing of foods has grown from an experimental stage to one of major commercial importance. For centuries, low temperature was known to be an excellent preserver of perishable foods and, about 1860, experimenters in this and other countries began to take some interest in the commercial possibilities of preserving meats and fish by freezing. Refrigeration machines were designed and were used first on a large scale for the freezing and transportation of South American and Australian meat and for the freezing, storage and transportation of fish in this country. One of the next developments arose in the Pacific Northwest, some 20 years ago, when a portion of the cheap surplus crop of strawberries was frozen for commercial purposes for the first time and this practice later made rapid headway in the South. Practically all the freezing was done with the fruit packed in 50-gallon wooden barrels, which are stored in the ordinary cold storage warehouse at a temperature of from zero to 15 degrees, F. In 1928, approximately 100,000 50-gallon barrels were frozen in the Northwest alone, strawberries and raspberries, blackberries, loganberries, currants, gooseberries and cherries predominating. The use of 5 and 10-gallon tin cans developed and much fruit, as well as eggs and many other foods, is now being frozen in containers of that capacity. With the development and sale of electrified household and store refrigerators, consideration was given to the sale of frozen fish, fruits, meat, etc., in small containers to retail consumers and today practically all of the frozen fruit, fish, meat and vegetables sold in these containers is packed and frozen at the original freezing plant.

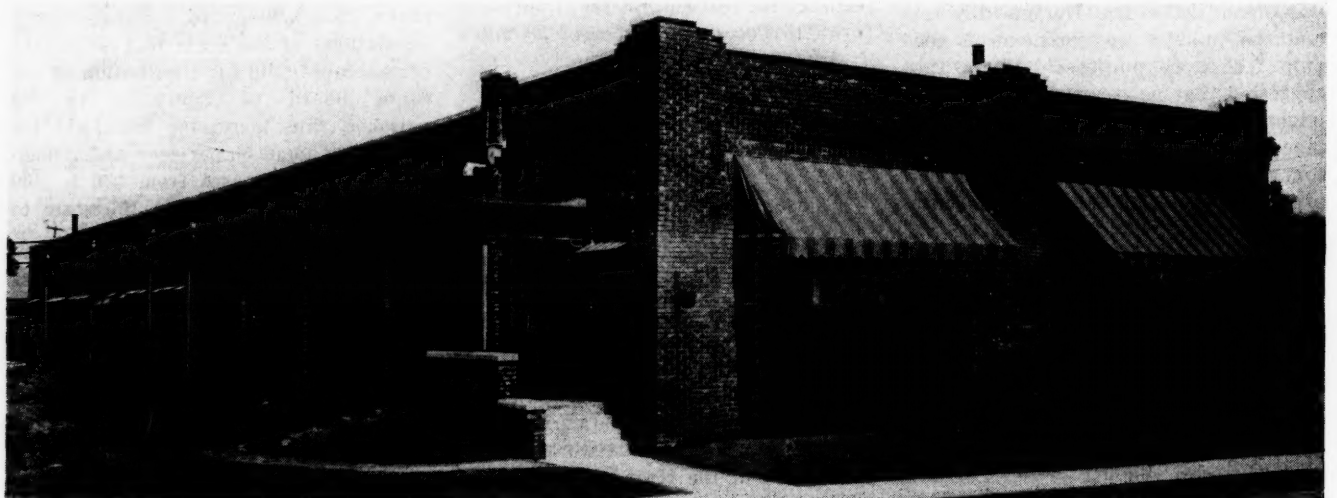
Unquestionably, the next great advance in distribution and marketing will be the general sale of frozen meats, fish, fruits, fruit juices, vegetables and probably milk in small packages at retail stores. This new development has definitely passed the experimental stage. Through many retail sales tests in all sections of the country it has proved to be of indisputable commercial value and therefore offers great possibilities. Fifteen million pounds of packaged fish, 30,000,000 pounds of strawberries and 9,000,000 pounds of cherries, to mention only a few of the foods, were frozen during 1929. Studies show a saving of three-quarters of a cent per pound in wholesale distribution and a 2½ cent per pound saving in retail distribution, due to economies effected by cutting, freezing and packaging meats at centrally located packing plants.

As a general rule, a grower, packer or fishery concern packages and freezes the food in some type of small container at the height of the season, when prices are lowest, and after the freezing the frozen food is stored until fresh food of that variety is no longer on the market. A number of different types of small containers for the retail sale of frozen products are in general use, including paper cups of various styles, folding paper boxes, tin cans and cellophane or parchment paper wrappers. Paper cups are most generally used for frozen fruits; a large proportion of the frozen vegetables, fish and meat have

been frozen in folding paper boxes, and many of the frozen fillets of fish have been wrapped in parchment paper after freezing.

In almost all freezing processes, berries are washed, graded and hulled and packed in the small container with several ounces of sugar syrup added. Peaches are peeled, pitted and sliced and packed with syrup in the containers. Grapes have the seeds and skin removed and the pulp is run into the containers. Orange juice is packaged in a similar manner. Grape-fruit has the segments of meat removed and these are packed in the container together with the juice. Vegetables such as beets, stringbeans and spinach are always thoroughly washed and some companies blanch them in addition. Peas and lima beans are shelled and packed, either with or without blanching. Pork chops and lamb chops are packed two or four to a carton, lamb for stewing is packaged in one-pound cartons and steaks are packaged in various weights from 12 ounces to several pounds. Rib roasts are packaged in larger cartons, depending on weight.

Fish are handled in various ways, depending on the freezing methods used. A plant in Jacksonville, Fla., is freezing units consisting of a number of small fish, shipped there by express from Lake Okeechobee, into one block weighing from six to eight pounds. A plant in Texas is freezing similar blocks of shrimp. Both these plants pack the frozen blocks into individual folding boxes. Most of the fish which is sold through retail stores, however, is sold in the form of fillets, weighing about six ounces each. In one process, several pieces of the unfrozen fillets are packed



Courtesy Georgia Agricultural Experiment Station  
World's Largest Plant Used Exclusively for Freezing Fruits, Began Operations in July at Montezuma, Ga.



in a folding box and then frozen, while in another they are frozen first and then wrapped in parchment paper.

There are many variations of a comparatively few general methods of freezing food in small containers, each with its own advantages and disadvantages. Simplest of all is to place the packages in a room maintained at a temperature of from zero to 10 degrees, F., such as may be found in almost any cold storage warehouse. A variation of that method, which is being used in two Georgia peach freezing plants, consists essentially of cooling air to approximately 30 degrees below zero by blowing it over a large refrigerating coil and then circulating that cold air around the packages until the contents are frozen. Refrigerated brine is used in other methods, the packages sometimes being placed in slightly larger metal containers, which are dipped into the brine at a temperature frequently as low as 35 degrees below zero, depending on the particular method employed.



Type of Container Used for Frozen Fish, Vegetables and Meat

In another method, in which the meat or fish is not packaged first, the food is laid on metal trays or pans that are floated on refrigerated brine until the meat or fish is frozen, after which the food is packaged. In still another process, the Birdseye, the packaged foods are run through a long machine between two moving metal belts, the upper



Typical Packages of Frozen Fruit

cooled by being sprayed with brine at about 40 degrees below zero, while the lower has brine at the same low temperature sprayed on its under surface. Some foods are being frozen in freezing cabinets which are cooled by solid carbon dioxide, some of which is known by the trade name "dry ice." It is an intensely cold material—about 110 degrees below zero—which turns directly into a gas upon melting. Before shipment, often before being put into storage, the smaller containers are packed in large corrugated boxes, used because of their high heat insulating value as well as their low cost and light weight. The frozen foods are distributed to retail stores in heat insulated motor trucks from centrally located cold storage plants.

In order to have freezing facilities close to production, plants are being built in agricultural districts as well as in communities that have other industries. One plant completed this year at Montezuma, Ga., is used to freeze many of the peaches grown in its vicinity,

with resultant benefit to growers and to the community. It is obvious that large quantities of refrigeration machinery and cold storage equipment necessarily must be manufactured for freezing plants and storage warehouses, and in addition many tens of thousands of electrified display cabinets will be required for retail stores. Also, there will be increased use of electric power.

The two outstanding benefits to be obtained through the freezing of foods are: First, the fact that foods may be preserved by freezing when they are plentiful and low in value, then held until there is a scarcity and prices are higher; second, the fact that consumers, wherever located, may have the equivalent of fresh foods at reasonable prices at any season of the year.

The preparation, distribution and sale of frozen foods has proved to be commercially practicable and economically justified. The industry appears to be one which will expand to large proportions and its growth will benefit many interests.

### 8½-Mile Santa Fe Rail Line

Heaton, Tex.—Construction of an 8½-mile rail line by the Atchison, Topeka & Santa Fe Railway Co., running south-east from Heaton, involves approximately 151,000 yards of embankment and 53,000 yards of excavation. There will also be about two miles of yard tracks and spurs to serve carbon black plants. Light grading work will be handled by fresnos and heavy grading by a ¾-yard gas air shovel loading material into 7-yard Athey caterpillar tractor-pulled wagons. General contract has been awarded to the Sharp & Fellows Construction Co., Los Angeles, Cal., and track will be laid by hand under the supervision of the William A. Smith Construction Co., Houston, Tex. Work has begun and is expected to be completed within three months. The line

is being built under the direction of G. W. Harris, chief engineer of the Santa Fe System, Chicago, with W. H. Rochester, construction engineer and F. T. Tuley, resident engineer, both of Amarillo, Tex.

### Steamer for Florida-Cuba Service

Tampa, Fla.—A new steamship being built by the Newport News Shipbuilding & Dry Dock Co., Newport News, Va., for the Peninsular & Occidental Steamship Co., of this city, for the Florida-Havana run, is expected to be launched next summer. The vessel will be 387.5 feet long, 56.5 feet wide, with a depth of 28.5 feet, load draft of 20 feet and 5900 tons displacement. It will accommodate 742 passengers.

### Fast-Growing Pines Recommended

Growing new timber is the only way to keep the pine industry of the South from "going back," the Department of Agriculture says in a circular on the rate of growth in second-growth Southern pines. Proper care of second growth and plantings alone will maintain the present income of \$524,000,000 a year from a business that employs 20 per cent of all the industrial labor of the Southern States. The circular, 124-C, gives information on making cut-over lands produce, and on how much various types of trees on proper soils may be expected to yield when cared for and protected from fire, with tables of yields in cords and board feet, together with data on methods of management.

# San Antonio Completes Sewage Disposal Plant

**\$900,000 Project Provides for Needs  
of a City of 400,000 Population**

**C**ONFRONTED with the problem of sewage disposal through means that had been employed since 1901 when the local population was 53,321, San Antonio, Texas, now a city of 254,562, started engineering surveys in 1928 which resulted in the completion this year of a \$900,000 activated sludge type disposal plant with a handling capacity of 30,000,000 gallons of sewage daily, and capable of serving a contributing population of approximately 400,000. The new treatment works are situated about six miles south of the city and consist of screen house, grit chambers, preliminary sedimentation tanks, final clarification tanks, digestion tanks, sludge lagoons, pump station and laboratory.

A 72-inch concrete sewer, 3000 feet of which was built in connection with the new project, carries sewage to the plant, and just before reaching the screen house passes through a 60 by 36-inch Venturi meter equipped with automatic register-indicator-recorder to measure the total flow. From here the sewage passes through an open channel six by five feet to the screen house. Two channels are provided, one has a rotary mechanical Dorr screen with half-inch openings and the second or by-pass channel has a plain bar screen with similar width openings. Screenings are burned in an incinerator built in the screen house, using gas from the digestion tanks for fuel. A by-pass channel connecting with the screen

house allows for passage of the sewage flow around the entire plant.

In the adjacent grit chambers are three channels, any two of which are sufficient for passing the sewage flow, which through these chambers is reduced to a velocity of approximately a

period with an expected removal of 42 per cent of the suspended solids. Aeration is provided in inlet channels to these tanks to prevent sedimentation of the solids and to mix excess sludge from the final clarifiers with the fresh sewage. The flow is across the tanks, ad-



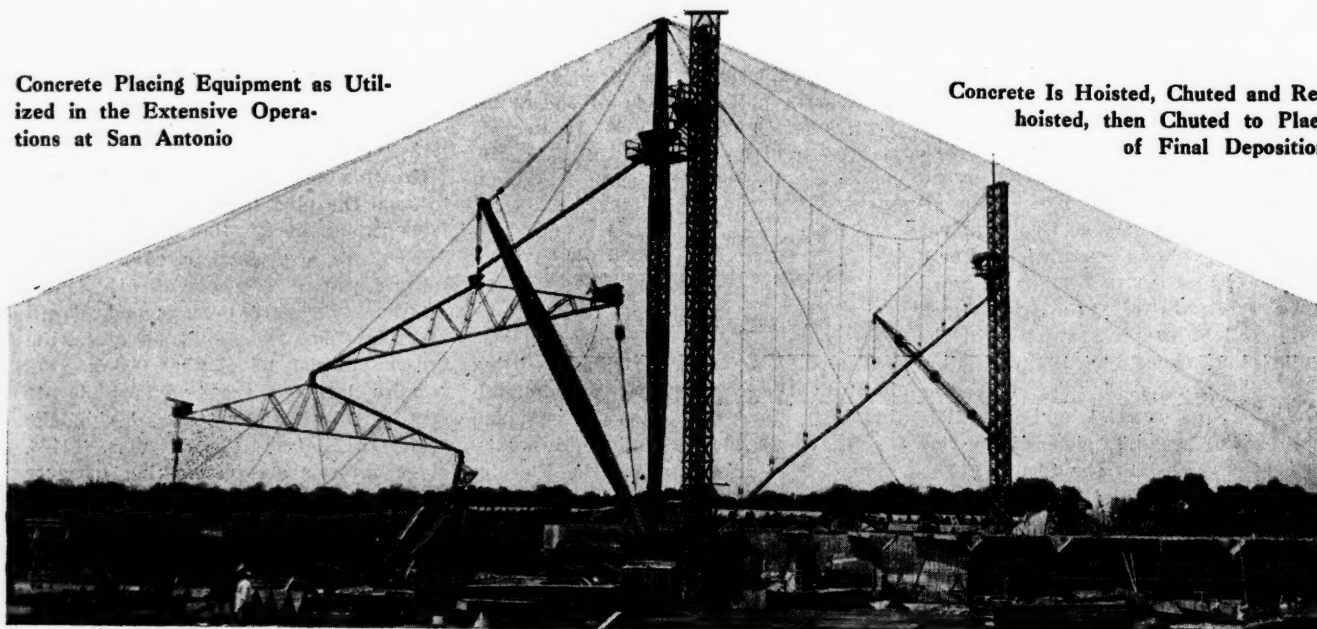
**Primary Sedimentation Tanks Prior to Installation of Dorr Equipment**

foot per second for a period of one minute. Continuing on its way the sewage passes through another open channel to two 60-foot square primary clarification tanks having an average water depth of 11 feet and designed on a basis of a 30-minute sedimentation

period with an expected removal of 42 per cent of the suspended solids. Aeration is provided in inlet channels to these tanks to prevent sedimentation of the solids and to mix excess sludge from the final clarifiers with the fresh sewage. The flow is across the tanks, adjustable weirs on the inlet side and submerged ports on the outlet side being provided to stop and skim off the oil and grease. The tanks are equipped with Dorr traction clarifiers, skimming devices and scum drains.

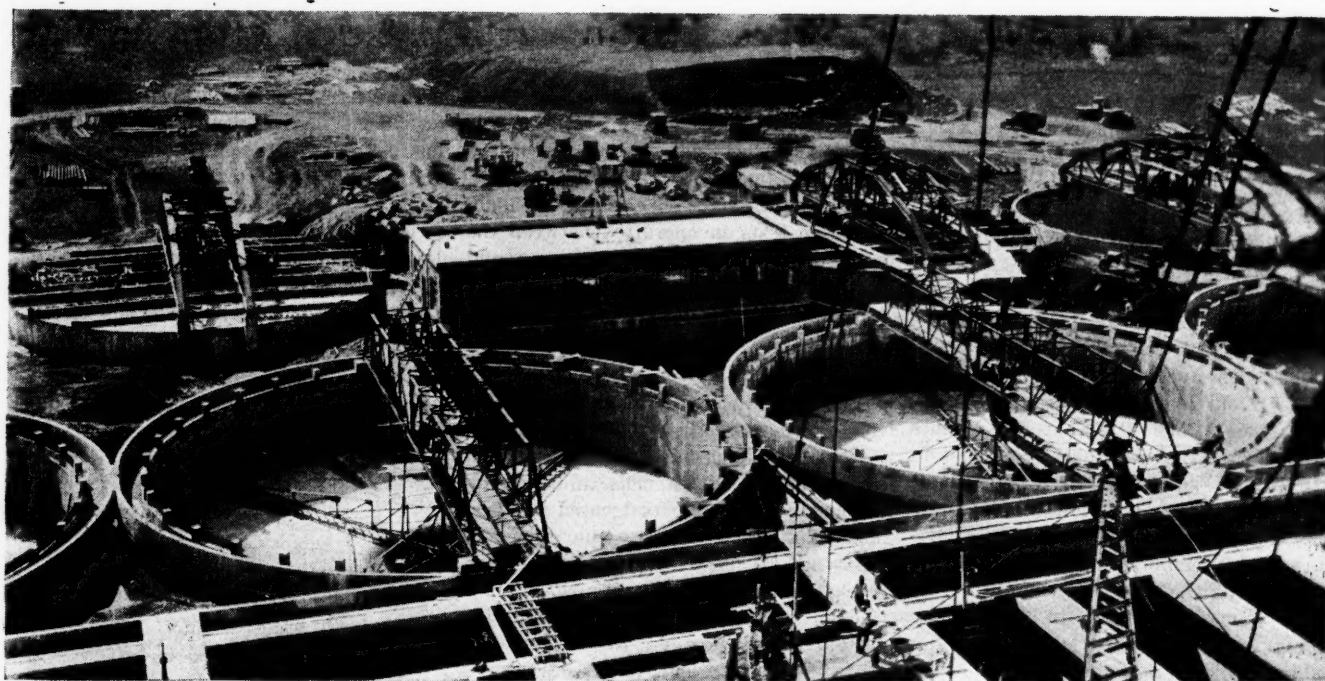
Next, entering a 200-foot long mixing

**Concrete Placing Equipment as Utilized in the Extensive Operations at San Antonio**



**Concrete Is Hoisted, Chuted and Re-hoisted, then Chuted to Place of Final Deposition**





Construction View of Pumping Blower House, With Covered Digestion Tanks at Each Side of Pump House

Final sedimentation tanks in center and end of aeration tanks in foreground

channel where approximately 20 per cent sludge is mixed with the incoming flow, the sewage goes to the aeration channels which are arranged in six batteries of three channels each, the sewage flowing back and forth through these channels and thus giving a total length of aeration channel of 450 feet. Aeration is allowed by three rows of filtrous plates along one side of each channel, each being 20 feet wide with a 15-foot depth of sewage, and the re-aeration of return sludge is provided in the center channel of the aeration tanks. The channels are baffled top and bottom to assist in giving a spiral motion to the sewage passing through. Aeration tanks, into which sewage enters through submerged 36-inch square sluice gates and passes out over adjustable weirs, are designed for a five-hour aeration period. Air is applied at the rate of 1.5 cubic feet per gallon sewage, and is measured by a Venturi meter at the pumping station.

The four final clarifier tanks, into the center of which the sewage passes

through 42-inch steel submerged pipe, are 90 feet in diameter by 15 feet deep and are designed for a two-hour sedimentation period figured on a basis of design flow plus 20 per cent return sludge and on a sedimentation rate of 1600 gallons per square foot of tank area per day. These tanks are equipped with Dorr clarifiers and are provided with adjustable weirs around the outer wall over which the sewage flows into a collecting channel and then to the final effluent channel. Excess sludge from the final clarification is pumped into sludge digestion tanks—four in number, and each 75 feet in diameter, 25 feet deep and equipped with Dorr stirrers and scum breakers. Gas collection domes, supernatant liquid overflows and manholes are provided. These tanks

allow for a 45-day storage of sludge—two Bryan hot water coils, fired by gases resulting from this process, being installed around the inside walls to keep sludge at the most favorable temperature for digestion. Pumps remove the digested sludge to two sludge lagoons, each about an acre in area and 10 feet deep.

The plant pumping includes: Two 110 g.p.m. triplex pumps, installed in a small underground pumping station at the primary clarifiers to pump the sludge direct to the digestion tanks. Three return sludge pumps, each with a 2600 g.p.m. capacity, to draw sludge from the clarifiers and to pump it to the mixing channel. Two 150 g.p.m. pumps handle the excess sludge from the clarifiers to the digestion tanks, while one seven by ten-inch triplex pump of 210 g.p.m. capacity is provided to pump digested sludge from digestors to the sludge lagoons. A 1700 g.p.m. pump is available for draining tanks and emergency use. Four General Electric centrifugal blowers, each with a capacity of 9000

Laying 72-inch  
Concrete Sewer  
Line





cubic feet per minute against an eight-pound pressure are installed. These blowers, being connected by gear speed increasers to 440 horsepower, 3600 r.p.m., revolve 11,450 times per minute. Air is filtered through Midwest sinous vertical filters.

Except for the raw sludge pumps, all equipment is installed in a pumping station 30 by 75 feet. The pumps are located on the lower floor, which is below the water level in all the plant units. Equipment in the pumphouse is provided with automatic controls and operates from a switch board located on the upper floor. Push-button switches are provided also at the motors and at convenient points on the pumphouse floor. A garage and laboratory building contains showers and other conveniences for employees. Flood lights are installed at the screen house and on the main pumping station, in addition to lights which are placed on the clarifier tanks and digestion tanks.

Design of the plant is so arranged as to permit the following: All sewage to be by-passed; any unit to be by-passed; variation of time of aeration; aeration of raw sewage; re-aeration of activated sludge; variation of the detention period in the final clarifiers by using all or part of the tanks; building of additions to any of the various operating units.

In addition to the pumps and blowers previously mentioned, the material required in construction of the plant included some 16,000 cubic yards of concrete, 750 tons of reinforcing steel, 350 tons of clarifier and digester equipment, 600 tons of cast iron pipes, 500 gate valves of various sizes, and 27 sluice gates varying in size from two to six square feet.

General contractor for the project was J. DePuy, San Antonio; Hawley and Freese, consulting engineers of Fort Worth and San Antonio, designed and supervised construction of the plant. Equipment for the primary clarifiers and the digestors, and for the mechanical screen, is from the Dorr Co., Chicago and New York. The final clarifier equipment is from the Butchart Manufacturing Co., Joplin, Mo. Blowers were supplied by the General Electric Co., Schenectady, N. Y. Sludge pumps were purchased from the Yeomans Brothers Co., Chicago, while miscellaneous pumps were supplied by the Dayton-Dowd Co., Quincy, Ill.

### Conference of Realtor Secretaries

Planning and fitting real estate board activities to needs of the present time, with new services and new methods, will be the keynote of a conference of real estate board secretaries at Chicago, November 20, 21 and 22.

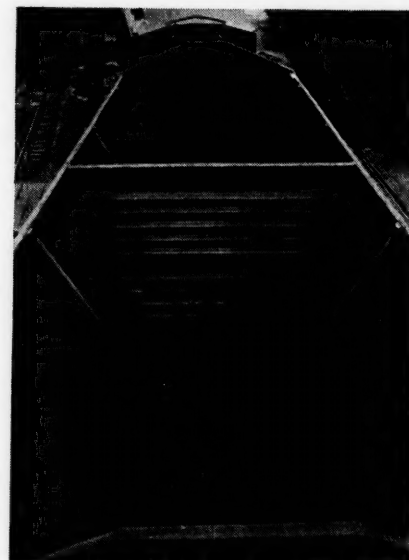
## B. & O. Testing All-Welded Hopper Car

A 90-ton all-welded hopper car, designed and constructed by the mechanical engineering and shop forces of the Baltimore and Ohio Railroad at its Mt. Clare shops, Baltimore, is being subjected to tests in operation between the mines from which the coal comes and the Curtis Bay coal tipples. To the present time results have been satisfactory, the car meeting expectations of the designers.

The car is provided with four transversely aligned pairs of hoppers extending along the length of the car and located between the trucks, and four additional corner hoppers located between bolster and end of car, which permits also end discharge of load across the track. The corner hoppers also increase the car's capacity. Sides are flush with "T" section stakes on the inside, and the sides at the end are recessed for application of ladders. Car ends are vertical, making the car self-clearing. The inside of the car is divided into two parts by a transversely corrugated partition wall. With the center partition are four diagonal gussets which act as braces for the car sides.

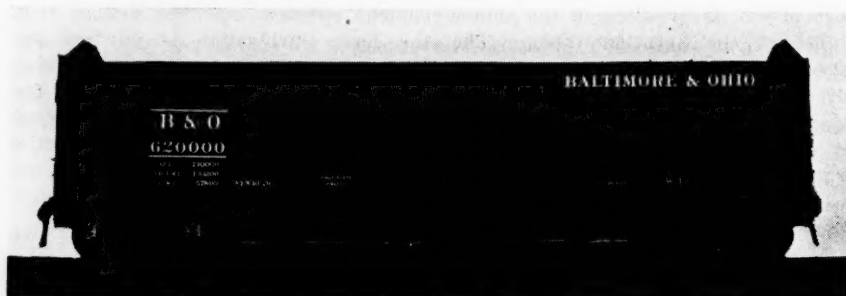
Trucks are so built that the wheels are automatically positioned in curves at whatever radius the car may pass through, reducing flange and railwear and curve resistance. No bolts, pins, washers or nuts are required in the assembling or maintenance of the truck. Removal and replacement of wheels is

facilitated. Floating journal boxes are provided. The car weighs 57,800 pounds, has a total capacity of 3161 cubic feet and an allowable load limit of 193,200 pounds. The latest hopper cars constructed by the Baltimore and Ohio Railroad in 1929 weighed 55,600 pounds, have a total capacity of 3060 cubic feet and a given load limit of 154,400. Hence,



End View of Car, Showing Interior Construction

a considerable increase in load limit is obtained in the welded car, with only a slight increase in weight and none in size, the railroad points out.



Weight 57,800 Pounds, Capacity 3161 Cubic Feet, Load Limit 193,200 Pounds

### BIG POTTERY PROJECT

#### Mississippi Clay Company Plans Extensive Development

Charleston, Miss.—The development of rich clay deposits in Tallahatchie County and the construction of a factory at Charleston for the manufacture of china, pottery and other clay products will be undertaken by the Mississippi Clay Co., recently incorporated with an authorized capital stock of \$3,000,000.

From a survey of the Tallahatchie County clay fields, made by ceramic experts prior to the incorporation of the company, it is said the deposits are suited for making the finest china products. It is understood the new company plans to make large quantities of rough china ware, in addition to specializing in the production of fine table ware. Incorporators of the company include Ned R. Price, J. W. Saunders and H. M. Stuart, all of Charleston, and B. F. Saunders, Webb, Miss.

# How an Arkansas County Found Success Through Dairy Farming

By

HARRY B. TABER,  
Conway, Ark.

IN past years, Craighead County, in eastern Arkansas, devoted the major part of its farming activities to growing cotton, corn and fruit. Part of the county is on the famous Crowley Ridge, the only natural range of hills in the well-known east Arkansas sunk-land area; the rest of the county is rich bottom land. Cotton was the main crop and of late years it did not bring enough to give the farmer credit to go on for another crop. So, almost in self-defense, this county began to figure on the dairy cow as a partial solution to its problems.

In the last three years, Craighead County has had a rapid and successful dairy development. Five years ago, hardly half-a-dozen dairy cows with registration papers were to be found in the county, with the sole exception of a few at the Jonesboro A. and M. College. The start was made with native cows owned by a few farmers; their first shipment of dairy products was in the shape of four half-gallon mollasses cans, they had no regular containers even for the milk. But from this beginning Craighead County advanced to the exceptional figure of \$250,000 worth of dairy products shipped out in 12 months, and this at the end of only the third year.

In July, 1926, F. W. Bailey, county agent, at Jonesboro, aided by G. P. Gibson, a banker of Brookland, 10 miles northeast, induced some 75 or 80 business men and bankers of the county to make a dairy inspection tour of various points in Mississippi, especially Tupelo, where dairying had advanced to a scientific and successful basis. There the party visited particularly the smaller

dairy farmer, talked with him personally, studied his methods, saw the fine cattle, and the cream checks coming in, and the Craighead delegation returned home completely sold on the proposition of dairy farming as the most adaptable venture the home county could make. The little community of Brookland started first and the business has steadily grown. "In 1928-29 we sold in a 12 months' period somewhere between \$25,000 and \$30,000 worth of dairy products," Mr. Gibson stated, "and we find dairying fits in with and stimulates our cotton and truck crop output so well that we are making more per acre from these regular crops, and we are increasing our dairy herds."

Brookland now has two well-established cream stations, a good two-year high school, a cannery and a gin. The cannery is one of the busiest and most successful in the Southwest, and the modern gin is not far behind, both of these industries having suffered not a whit from the introduction of dairy farming, quite the contrary. The cannery operates six months in the year, canning green beans, turnip greens, tomatoes and sweet potatoes. Some 20 carloads of canned goods are shipped out annually and the cannery pays the farmers all the way from \$1000 to \$2000 per week during the season's run.

Geo. A. Lamb, leading merchant of Bono, and a prime mover in promoting

better dairy stock in that community, calls attention to the fact that the county has a stock law and is tick free, and every head of dairy stock brought into its borders carries a test for ticks on its waybill; in the last year at Jonesboro, more than 700 head of cows which furnish raw milk products have been thoroughly tuberculin tested. There is a thriving cream station at Bono, and another is likely to be in demand inside a few months, with the dairy business on the increase as it is in that section. In a similar way other sections of the county are growing into the dairy business. The Jonesboro A. & M. College has increased its dairy herds until today it has one of the ranking herds of the South.

All of this is quite a step up from two or three second-hand molasses cans of cream in July, 1926, and the best of the story perhaps is that abundant meadows and pastures are being provided and that Craighead is one of the best corn and home-grown feed counties generally in the central South. Right in Jonesboro, county seat, the Midwest Dairy Products Co., the Jonesboro Creamery, and the Walnut Grove Dairy Pasteurizing Plant buy a total of \$120,000 worth of the dairy farmers' output per year, which means that approximately half the county's dairy products output has a market well established within its own borders. There is a good demand for even more than the other half from outside markets in convenient nearby cities of such rank as Memphis, Tenn., Springfield and St. Louis, Mo.

## Fertilizer Production and Sales

Shipments and deliveries of fertilizers in 1929 amounted to \$190,665,017, at f. o. b. factory prices, an increase of 15.4 per cent over 1927, the preceding census year, according to the Department of Commerce. The total for 1929 is made up as follows: Complete fertilizers, 5,515,430 tons, valued at \$153,238,795; superphosphates, including concentrated phosphates, 2,140,689 tons, \$26,321,978; potash superphosphate, 220,338 tons, \$5,180,152; ammoniated fertilizers, 40,454 tons, \$1,183,368; fish scrap, 31,774 tons, \$1,329,764; bone meal, 15,992 tons, \$556,520; other fertilizers, 120,042 tons, \$2,854,440.

In addition, fertilizers made as

secondary products by establishments engaged primarily in other lines in 1927 were valued at \$8,537,436, equivalent to 5.2 per cent of the value of fertilizers made within the industry. The corresponding figure for 1929 is not thus far available. The 1929 figures in the following table are subject to revision.

### SUMMARY FOR THE INDUSTRY.

	1929	1927
Number of establishments .....	592	621
Wage earners (average for the year)...	19,690	18,612
Wages .....	\$17,295,647	\$17,049,661
Cost of materials, containers for products, fuel and purchased electric current.....	\$151,634,635	\$138,142,925
Products, total value.....	\$219,001,224	\$190,384,890
Fertilizers .....	\$190,665,017	\$165,272,337
Other products.....	\$28,336,207	\$25,112,553
Value added by manufacture .....	\$67,366,589	\$52,241,965

## Power Dam Earthwork Contract

Dallas, Tex.—Marking a step in the construction of a power project in the Mountain Creek territory near Dallas, which will ultimately involve an estimated expenditure of more than \$8,500,000, the Dallas Power & Light Co. has awarded contract to the W. E. Callahan Construction Co., Dallas, for earthwork on an 8100-foot dam with an average height of 22.5 feet. The construction of the power project will be carried forward in four units, it is understood, the first unit to have an initial capacity of 35,000 kilowatts, while the ultimate capacity of the 4 proposed units will be 120,000 kilowatts. This capacity may be increased later to 200,000 kilowatts.



# Progress in the Wood-Preserving Industry

Southern States Show Substantial Increase  
in Quantity of Wood Treated and in Variety  
of Purposes for Which It Is Used

By

P. R. HICKS,  
Secretary-Manager, Service Bureau,  
American Wood-Preservers' Association,  
Chicago, Ill.

THE demand in America for timber and forest products preserved against decay and destruction by insect attack aggregates annually many millions of feet, and the demand is steadily increasing with our general industrial growth. Consumers who have been using quantities of treated timber for many years have materially increased their demands for installations in established fields. In addition, there has developed a demand for a vast volume of treated wood in miscellaneous fields where formerly either untreated wood or some substitute material was employed. The wood-preserving industry has naturally been forced to expand very considerably to meet this increased demand adequately. Capacities have been increased, new plants have been constructed where necessary to serve additional territory more economically, and some of the older plants have been modernized or entirely rebuilt to meet exactions which research and experience have proved necessary for the most effective treatment.

## *Demand for Treated Timber Increases*

Lumbermen of the South have long been justifiably proud of the splendid

stand of Southern pine extending from Texas to Virginia, more or less concentric with the Gulf and the seacoast. In addition to the large quantity of treated construction timber and cross ties produced from this region last year, more than 2,000,000 pine poles were produced and given pressure treatment their full length.

Wood preservation plants have been located to effect the best distribution of timber from the point of production to the section where the finished products are to be utilized. This, of course, means that they must be located at points tributary to main transportation arteries of the country, usually at points situated between source of supply and region of consumption. This strategic location obviates the necessity for back haul and permits the most economic distribution to all sections.

Statistics covering the operation of wood-preserving plants in this country, compiled by the U. S. Forest Service and published recently, show a very substantial growth of the industry since the previous year. This is indicated by the fact that during the year a few more treating plants were in operation in some sections, a greater quantity of

preservatives was used, and a greater amount of wood was treated than ever before. This report divides the material treated into eight classes, listed according to volume treated: Crossties, poles, construction timbers, piles, switch ties, miscellaneous material, wood blocks, and cross arms. Two of these classes, however—construction timbers and miscellaneous material—could well be subdivided, as each class covers a great diversity of uses. The classification, construction timbers, includes all heavy wooden members used in building bridges, wharves, docks, piers, trestles and similar structures, while miscellaneous material covers items not included in the other classifications, such as building material, mine ties and timbers, fence posts, car material, crossing plank, shingles, conduit, etc.

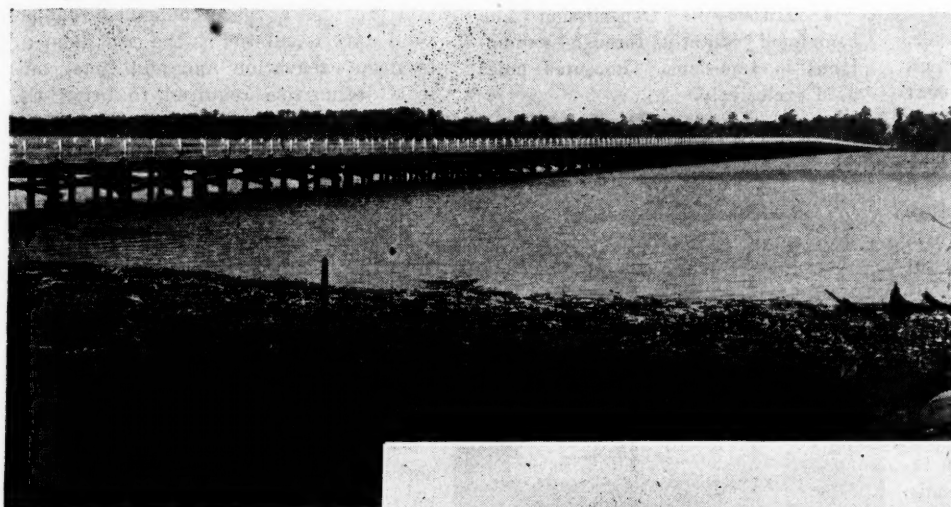
As might be expected, the largest single item of treated timber is that required for the maintenance of our railway systems. Ties, of course, continue to constitute the bulk of this railway material, but there is a very noticeable increase in the quantity of material treated each year for crossing plank, signal material, and miscellaneous purposes.

The greatest increase in any one class of product treated in 1929 was in poles, a total of 4,383,768 being treated for power lines and telephone and telegraph systems, an increase of approximately



Framing bridge timbers at a creosoting plant. Every piece entering into the construction job is cut to exact size, and all drilling for bolts, etc., is furnished before treating. It is necessary only to assemble the structure when it arrives on the site.





Treated piling and timbers are in demand for construction of the great bridge mileage necessary over the creeks, bayous, rivers, bays, lakes and swamplands of the South. Above is shown a bridge built of creosoted Southern pine at Julington Creek, Fla.



Below is a construction view of a dock at Lake Charles, La., built entirely of creosoted timbers, piling, etc., to insure long life with minimum maintenance cost.

729,000 poles over the preceding year.

Consumption of creosote during 1929 amounted to more than 226,000,000 gallons, an increase of almost 6,000,000 gallons over the previous year. Almost 20,000,000 pounds of zinc chloride were used also during 1929. This preservative is being utilized in continually increasing amounts for treatment of lumber for building and other construction where an odorless material is required or where paint or other finish is to be applied. Coal-tar creosote and zinc chloride, or mixtures in which creosote was depended on to provide the toxic ingredient, comprised 99 per cent of all preservatives used during the year. The remaining 1 per cent comprised 1,188,148 pounds of miscellaneous salts and 38,410 gallons of miscellaneous liquids. The former consisted of such chemicals as arsenic trioxide, corrosive sublimate, sodium arsenite, sodium chloride, sodium fluoride, Wolman salts, and zinc-meta-arsenite, while the latter included Aczol, carbolineum, Carbosota, and Montan wax.

While this increase in preservatives used is attributed largely to the greater volume of timber treated, there is a growing tendency to specify heavier absorptions of preservative. With the more careful attention paid to methods of

reducing mechanical wear, particularly in ties, and to the design of timber structures, such as bridges and wharves, deterioration from mechanical sources is postponed, and a proportionately heavier preservative treatment is required to meet the increased life made possible by better mechanical protection.

#### *Pre-fabrication Important Development*

Records are fast becoming available to show that the life of properly treated timber under severe conditions may be conservatively estimated at upward of 35 years, and some treated timber in service today is in excellent condition after 45 years service. Engineers are becoming more appreciative of the importance of reducing to a minimum all cutting of the timber after treatment if this long life is to be obtained. Instances are frequently noted where timber given the best treatment obtainable is taken to the site of construction and there cut and framed so that the interior untreated portion is exposed to the destructive action of decay, termites, or marine borers, as the case may be. Timber so handled cannot give the long service that will be obtained from timber that has been cut to size and framed before treatment, and one of the impor-

tant recent developments has been recognition of this fact and the consequent installation of equipment necessary for pre-fabrication of timber at the treating plants.

An illustration of the precision with which this process of pre-fabrication is accomplished was observed recently in connection with the flooring of a large city bridge with creosoted timber. More than 62 types of framing, some of quite intricate patterns, were required. All the material was framed and bored prior to treatment, and accuracy to within 1/16 inch was guaranteed, a degree of exactness equal to that usually demanded in structural steel fabrication. The purchaser of treated wood who fails to avail himself of the ability and willingness of treating plants to give this added protection is deliberately overlooking the possibility of obtaining the greatest possible returns on his investment.

Railroads have been cognizant for some time of the value of pre-framing their structural timbers and of adzing and boring ties prior to treatment. This practice results in deep penetration and good retention at the most vulnerable point of the tie and prevents puncturing of the treated portions by spike driving. In 1929 the steam railroads adzed and

bored 64.6 per cent of their ties before treatment, and the electric railroads, 72.5 per cent of their ties. These figures for the previous year were 58.3 per cent and 54.7 per cent, respectively.

Telephone and power poles are gained, roofed, and bored before going to the treating cylinders, and the manufacture of cross arms and other special products has also required the installation of modern machinery.

### Developments in the South

For convenience in compiling statistics on wood preservation the country has been divided into five regions. That known as the Southern Coast Region includes practically all the Southern States, those removed from as well as those contiguous to the sea and the Gulf Coast: North Carolina, South Carolina, Florida, Georgia, Alabama, Mississippi, Louisiana, Texas, Oklahoma, Arkansas, Kentucky and Tennessee. The figures given cover only timber treated at plants located in the section, all of which, of course, was not consumed in that particular region. Furthermore, a large part of the timber and forest products treated in other regions was cut from Southern forests and shipped to various plants for treatment. While geographically Maryland and Virginia are Southern States, they are grouped in this statistical report with the Atlantic Coast States. Since the figures on treated wood consumption are given for the entire region, and not by individual States, statistics on the amount of wood treated or consumed in these two States are not available.

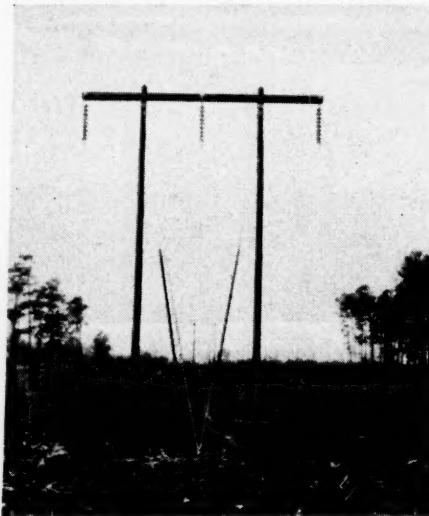
Sixty-two active treating plants were located in the Southern Coast Region in 1929, which is the same number reported the previous year. The total timber treated in this region in 1929 was 1,701,886,224 board feet, compared with 1,443,153,048 board feet in 1928, an increase of 258,733,176 board feet, or 17 per cent. The logical conclusion, therefore, is that these 62 plants treated more nearly to capacity than at any time previously. Of these plants, 49 were engaged in commercial treatment, 9 were owned by railway companies and operated to supply their own needs only, and 4 were private plants.

### COMPARATIVE QUANTITIES OF WOOD TREATED IN SOUTHERN REGION.

Class of material	1928	1929
Crossties—Cu. ft....	64,145,526	69,679,149
Switch ties—Bd. ft....	50,964,821	52,439,145
Piles—Lin. ft.....	13,443,424	17,894,804
Poles—No. ....	1,479,972	2,042,062
Blocks—Sq. ft.....	2,528,388	10,593,558
Timbers—Bd. ft....	183,158,192	180,583,968
Cross arms—No.....	1,178,181	2,571,436

While, of course, untreated wood used for certain purposes in any part of this country is subject to decay, certain conditions naturally existing in the South,

A 110,000-volt transmission line completed recently through swamp-lands in Louisiana. Creosoted poles used exclusively.



that is, the higher average temperature and greater humidity, tend to accelerate the decay of untreated wood. It is also true that the termite, or white ant, is much more prevalent in the Southern States than in the more Northern States, and it is becoming almost imperative, from the standpoint of economy, that all wood in contact with or in proximity to the ground be given proper preservative treatment to prevent destruction by this insect. Increasing activity of treating plants in the South indicates that consumers of wood are cognizant of the presence of these destructive agencies and are adopting the most effective means to make wood immune to their action.

This tendency manifests itself especially in the increasing use of treated wood in buildings of various types. Textile and paper mills are yearly using greater quantities of treated timber for roofing, flooring, and foundation timbers. Zinc chloride has been used extensively of late for treatment of roof timbers. Wood so treated resists decay and can be painted satisfactorily, while for lighting purposes it is very desirable in various types of mills.

The quantity of wood blocks creosoted in 1929 by Southern plants was more than four times that treated in 1928, and 96 per cent of these blocks were used for interior flooring. While, of course, this material was not all consumed in the region of these plants, it is probable that the consumption there was proportionately increased.

It is gradually becoming common practice in the South and elsewhere to use creosoted piling extending above the line of permanent saturation for foundations of buildings. This piling, properly treated, is not attacked by decay or insects,

and provides a very economical foundation, since it eliminates the cost incident to deep excavation and additional material otherwise required to bring the masonry well below the line of permanent saturation. This practice anticipates at negligible expense any future subsidence of the water table.

While the wood-preserving industry has thus been progressing steadily, attention has not been concentrated entirely on volume production and extension of markets, but also on a study of present-day conditions and requirements and of means by which treated wood products can be made to serve their purpose even better than in the past. Preservatives and processes of treatment have been standardized. Needs of the individual consumer have been given closer attention. In certain sections of the country the smallest consumer can now obtain through retail lumber dealers the amount of treated lumber he needs. However, there are still a number of problems which must be worked out in retail distribution of this material, and when this has been accomplished it is hoped the same opportunity will be given to small consumers in every part of the country.

There is a treated product best adapted to each specific need, whether it be for the largest industrial concern or the smallest individual consumer. Reliable treating plants are glad to co-operate with the purchaser in his effort to secure material that is economical, permanent, and satisfactory in every respect.

### Gum Turpentine-Rosin Marketing Association

Jacksonville, Fla.—The Gum Turpentine-Rosin Marketing Association, which recently acquired the Naval Stores Marketing Corp. here, commenced operations on November 1, at which date, it is said, about one-third of the entire production of gum turpentine and rosin had been signed up in the association under marketing agreements. Officers of the Naval Stores Marketing Corporation were elected to similar positions in the new association, including H. M. Wilson, executive vice president; Irving Post, vice president and general manager, and Carl Moller, secretary. Julian Langner prepared plans for the organization, whose policies include co-operation with members and other turpentine gum farmers in problems of production, to encourage production of annual crop, develop an orderly and economical system of marketing, to co-operate with distributors, to encourage trade extension through research and advertising and to promote other plans and activities.



# \$68,453,000,000 Value of Manufactures in 1929

## Census Summary of Totals for All Manufacturing Industries Establishes New Record

The Bureau of the Census announces that, according to a preliminary tabulation of the data collected in the Census of Manufactures taken in 1930, the total value (at f. o. b. factory prices) of products reported for 1929, \$68,453,486,518, exceeds by 9.1 per cent the corresponding total of \$62,718,347,289 for 1927, the last preceding census year. The number of wage earners (average for the year) increased 2.4 per cent, from 8,349,755 to 8,550,284, and wages increased 3.9 per cent, from \$10,848,802,532 to \$11,271,016,618. As compared with 1919, the changes are as follows: Value of products, increase of 10.3 per cent; number of wage earners, decrease of 5 per cent; wages, increase of 7.7 per cent. Because of the substantial decline in wholesale

prices between 1919 and 1929, the rate of increase in value of products does not reflect the true increase in production during the ten-year period.

In making use of the statistics for 1929 it should be borne in mind that the cost of materials and the value added by manufacture are not strictly comparable with the corresponding figures for 1927 and 1919, because of the exclusion from the current figures and the inclusion in the earlier ones of data for mill or shop supplies. This change was made by the recommendation of an advisory committee appointed by the Secretary of Commerce, the purpose being to render it more convenient for the manufacturers to make their reports. It has had the effect of reducing slightly

the cost-of-materials item and increasing to the same extent the item for value added by manufacture, calculated by subtracting the cost of materials from the value of products.

The figure for value of products includes a large but indeterminable amount of duplication resulting from the use of the products of some industries as materials by others. For example: Manufacturers of motor-vehicle tires report the total value of such tires made, including the value of those sold to motor-vehicle manufacturers for installation on new vehicles, and these manufacturers in turn report the total value of vehicles manufactured, including the value of the tires. As a rule, whatever duplications occur are between different industries and are not found to any extent within individual industries. The value added by manufacture, which is calculated, as explained above, by subtracting the cost of materials from the value of products, is, however, free from the duplication found in the gross value of products, and therefore represents approximately the actual value created by the manufacturing industries of the country.

Separate preliminary reports giving both summary statistics and detailed production figures have already been issued for about 100 industries, and those still to be published will be ready for distribution before the end of the year. A single preliminary report giving summary figures for each of the 331 industries covered by the census classification will be issued later.

SUMMARY FOR ALL MANUFACTURING INDUSTRIES: 1929, 1927, AND 1919

	1929	1927	1919	Per cent of increase or decrease (—)	
				1927-1929	1919-1929
No. of establishments	199,268	191,866	214,383	3.9	—7.1
Wage earners (ave. for the year)*.....	8,550,284	8,349,755	9,000,059	2.4	—5.0
Wages† .....	\$11,271,016,618	\$10,848,802,532	\$10,461,786,869	3.9	7.7
Cost of materials, containers for products, fuel, and purchased electric current‡.....	\$37,357,631,108	\$35,133,136,889	\$37,232,702,390	†	†
Value of products§.....	\$68,453,486,518	\$62,718,347,289	\$62,041,795,316	9.1	10.3
Value added by manufacture¶ .....	\$31,095,855,410	\$27,585,210,400	\$24,809,092,926	¶	¶

\*Not including salaried employees. The average number of wage earners is based on the numbers reported for the several months of the year. This average somewhat exceeds the number that would have been required for the work performed if all had been continuously employed throughout the year because of the fact that manufacturers report the numbers employed on or about the 15th day of each month as shown by the pay rolls, usually taking no account of the possibility that some or all of the wage earners may have been on part time or for some other reason may not actually have worked the entire month. Thus in some cases the number reported for a given month exceeds the average for that month.

†Manufacturers' profits cannot be calculated from the census figures because no data are collected for certain expense items such as interest on investment, rent, depreciation, taxes, insurance, and advertising.

‡The cost-of-materials items for 1927 and 1919 are not strictly comparable with the corresponding item for 1929 because of the fact that the schedules for 1927 and 1919 provided for the inclusion of data on the cost of mill or shop supplies, whereas the schedule for 1929 stated that such data should not be included. For this reason no per cent is shown.

§Value of products less cost of materials, containers for products, fuel, and purchased electric current. The figures for 1927 and 1919 are not strictly comparable with the figure for 1929 because of the change in the cost-of-materials item.

### Consumers of Fruits and Vegetables

Some interesting discoveries are being made in the Analysis of Distribution surveys made by the Commerce Department. That the poor and rich are alike in offering an excellent market for fresh fruits and vegetables, is indicated by the survey of sales of these commodities through 26 stores in Louisville, Ky., selected as a national laboratory in which distribution costs and characteristics of items sold through grocery stores might be subjected to close scrutiny.

Fresh fruits and vegetables accounted

for approximately 11 per cent of all sales. In all types of communities this figure did not vary greatly, and only a slight indication was noted that higher income communities afforded a somewhat better market. Sixty per cent of such produce sales was in vegetables and forty per cent in fresh fruits.

The handling of these products is analyzed in detail in "Selling Fresh Fruits and Vegetables Through Retail Stores." Sales, earnings, and operating factors are broken down by specific commodities. Copies of the report are available without charge from the Marketing Service Division or any District Office of the Bureau of Foreign and Domestic Commerce.

### \$550,000 Waterworks Improvements

Lawton, Okla.—Plans for waterworks improvements here to cost about \$550,000 have been completed by Burns & McDonnell, Kansas City, Mo., consulting engineers, and contracts are expected to be awarded between November 15 and 30. The project includes a filtration plant with a nominal daily capacity of 10,000,000 gallons; about 12,000 feet of 24-inch pipe to extend existing flow lines, together with general distribution system improvements and a 500,000-gallon tank on a 130-foot tower.



## Tung Oil in Mississippi

By HENRY BRYANT, Waukesha, Wis.

Tung oil trees were first introduced into Mississippi some 20 years ago in a purely experimental way, seed being sent to various farmers through government agencies with request that they be planted. I have seen samples of these original plantings, now grown to trees which have had not the least care but have been merely tolerated along the fence line and which still carry on.

About four years ago investigators for the Southern Chinawood Oil Company made intensive studies in various localities, extending along the Gulf Coast all the way from southern Florida to the Mississippi River, with the object of finding a locality affording a combination of conditions suitable for propagation of tung trees. Even with the limited experience in tung tree propagation at that time, it was known in a general way that five factors would probably determine the question: Rainfall, temperature range, soil, land contour, and land values.

As a result of investigations, the location for the Southern Chinawood development was made in north central Jackson County, Mississippi, north of Moss Point. On a 1200-acre tract of gently rolling land, about 200 acres per annum have now been planted for the past three years with remarkable results. The first experimental planting of 100 trees was in January, 1927. This was in virgin land entirely unprepared by the plow and the trees were neglected for the first year, being almost smothered by high grass and weeds. Fertilizer was omitted and only a few trees, which by accident were planted in naturally fertilized ground where oak slashings had been burned, made material progress. In 1928, however, an additional 200 acres was planted, some in old field and some in virgin land. This acreage, though not properly plowed at first, was later cultivated and fertilized. Here the most notable progress has been realized and the possibilities of South Mississippi soil demonstrated. The old field plantings have done the best, are now about 22 months old and bearing good-sized fruit in unusual quantities for such young saplings. It is doubtful if similar results have been obtained elsewhere in this country or in any other. The trees have all shown vitality and rapid growth. The 1927 planting will run 15 to 25 feet in height, the trees are well filled out and this year are bearing heavily.

South Mississippi has adequate rainfall and favorable soil conditions and in addition the temperature range seems

ideal with respect to vitality of the tung tree. Being deciduous, the trees drop their leaves at the first frost and go through a dormant period until spring. This is normal for the tree in its native clime and for this reason apparently the tree does not do well in too hot or too constant a climate. On the other hand, very low temperatures will sometimes split the trunk wide open and even kill the trees outright.

Labor conditions and land values offer an opportunity for development of a large and prosperous industry in tung tree growing. Good tung oil land can be obtained in plentiful quantities at \$5 to \$10 an acre. In contrast, many acres have been planted on \$20 an acre land elsewhere in the South and are now yielding good returns even at that figure. This land can be cleared and prepared for \$15 an acre and all this tends to keep down the first cost of tung oil plantings in Mississippi, not only reducing the hazard but lowering the returns necessary to show a profit.

At present it appears that at least 15,000 acres will be planted to tung oil in Mississippi within five years. This might indicate overproduction in a few years, yet many well informed students of the possibilities of tung oil are convinced this acreage will not begin to satisfy potential demand and that it will take 100,000 acres to satisfy the paint industry alone. This means an investment of \$10,000,000 which is not likely to enter any new industry in a short period of time.

### Bids on \$5,000,000 Mart

St. Louis, Mo.—Plans have been completed for a \$5,000,000 16-story merchandise mart to be erected at Twelfth boulevard and Spruce street by the Terminal Railroad Association, Henry Miller, president, and bids will be opened November 24 on general construction. Rapid progress is being made on the foundation which is expected to be completed by December 10. Preston J. Bradshaw is the architect and W. J. Knight & Co., structural engineers, both of St. Louis. The enterprise will be operated by the St. Louis Mart, of which Lawrence H. Whiting, Chicago, is president.

Building permits issued in Atlanta, Ga., during October amounted to \$1,040,220, according to C. J. Bowen, building inspector, exceeding the value of permits issued in September by \$300,000.

### \$9,000,000 Texas Power Projects

Burnet, Tex.—Plans of the Emery, Peck & Rockwood Development Company, Chicago, for the construction of hydro-electric power plants on the Colorado River in Texas, contemplate three projects to cost approximately \$9,000,000, including transmission lines, structures, lands and other facilities. Initial construction will embrace the Hamilton Dam about 12 miles from Burnet, for a head of approximately 125 feet and an initial installation of 20,000 kw. It will be about 2½ miles long, including bulkhead and spillway sections, while a reservoir will cover approximately 25,000 acres. Present plans call for a 2½-year construction program on this project, and by the time it is completed it is expected that two dams down the river from the Hamilton Dam will have been completed also—one at the Cummins site with a 35-foot head and the other at Marble Falls with a 50-foot head. F. A. Dale, Austin, Tex., is the manager of the company.

### Now Get Busy!

[From the Atlanta Constitution]

In writing to William Candler, of this city, who is an executive of the United States Chamber of Commerce, George M. Verity, one of the great leaders in the iron and steel industry, speaking of the active business development coming into view, said:

"Your section of the country will undoubtedly show greater proportionate development than some of our older and more thickly populated sections."

If such astute and successful business leaders as Mr. Verity, and scores of others in the East and North who have recently spoken, see such brightening, not to say brilliant, prospects ahead of the Southeastern section, the wonder is why so many of our own leaders are balancing on halted heels and looking cross-eyed down their snuffling noses.

As Governor Eugene Black, of our Federal Reserve Bank, says, we need right now "courage" in business. We have plenty of "confidence" in the resources and the future welfare of our section. Nobody doubts or denies them. But if we who possess them are afraid to lay hold upon them with courage and realize them in great accomplishments, whom do we wait for to do the work for us?

The sooner our home people look up and not down, look ahead and not behind, and get a general move on them to make business good with the stuff and the money we undoubtedly have in hand, the sooner will the hum of industry fill our ears and the happiness of the people be vocal in the shops, and factories, and homes of the opulent Southeast.

# Diesel Units Cut Power Costs

## North Carolina Installation Permits Reduction in Electric Rates and Taxes

By  
R. C. PAUL,  
McIntosh & Seymour Corp.,  
Auburn, New York

CONFRONTED with the problem of an inadequate installation of equipment in its municipal power and light plant, also with a pressing need for economy in operation, accentuated by the extension of a private power company's high line to its boundaries, the city of Tarboro, N. C., in the latter part of 1928 started investigations which resulted in placing an order for two 900-horsepower heavy duty Diesel engines. These units, furnished and installed early in 1929 by the McIntosh & Seymour Corp., are of the eight-cylinder, four cycle, air injection type. They are direct connected

with too large an investment. The main engines have filter-equipped inlet headers, which permit taking in air from outside the station. A pyrometer is installed for determining temperatures of exhausts from the various cylinders, providing a convenient check on distribution of the loads. Operating from the sump tank of either unit, a DeLaval centrifuge pump cleans the lubricating

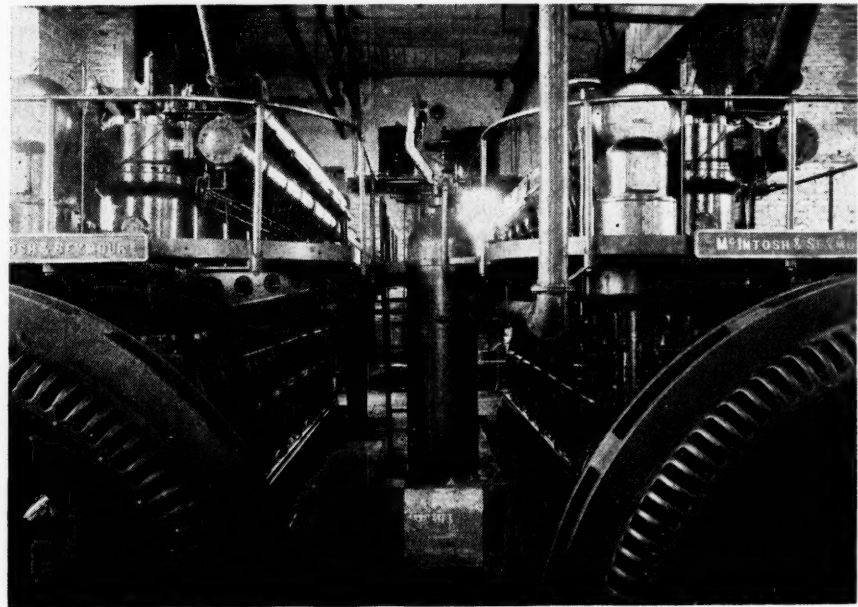
months of 1930 indicated that the new units were producing an average of 10.9 kilowatt-hours of electricity per gallon of fuel oil and that 1433 kilowatt-hours was generated per gallon of lubricating oil. From the accompanying tabulation it can be seen that operating cost per kilowatt-hour, including fuel and lubricating oil and labor, was slightly below one cent, which is remarkably good when the load factor is taken into consideration.

This load factor, based on the ten months period, is slightly better than 25 per cent and is low not only because of the widely fluctuating load but also due to the fact that ample capacity was installed to care for anticipated future growth. When to the cost of producing each kilowatt-hour is added fixed charges such as depreciation and interest and taxes, total cost for the kilowatt-hour unit figures out to a little over one and a half cents. An idea of the efficiency of operation of the new equipment may be taken from the statement of Mayor W. C. Horgan who writes that Tarboro has reduced rates on electricity, as well as the tax rate, and that further tax reductions are contemplated.

TABULATION OF OPERATING COSTS OF DIESEL ELECTRIC PLANT UNITS.						
Month	Fuel Oil (Gal.)	Lubricating Oil (Gals.)	Kw-h.	Fuel Oil Costs	Lubricating Costs	Labor Costs
May .....	18,371	100	186,200	\$1,194.11	\$52.00	\$729.33
June .....	18,665	100	182,700	1,214.22	52.00	593.00
July .....	19,399	100	194,700	1,260.93	52.00	620.00
August .....	21,815	100	231,200	1,417.98	52.00	675.00
September .....	22,376	100	233,900	1,454.44	52.00	593.00
October .....	25,883	250	296,400	1,682.39	130.00	605.00
November .....	26,242	300	289,900	1,705.73	156.00	593.00
December .....	24,244	200	254,400	1,475.86	104.00	605.00
January (1930) .....	21,220	200	230,400	1,349.64	104.00	625.00
February .....	18,335	150	194,200	1,100.10	78.00	625.00
Total .....	216,550	1,600	2,294,000	\$13,855.40	\$832.00	\$6,263.33
Average kilowatt-hours generated per gallon of fuel oil.....						10.9
Average kilowatt-hours generated per gallon of lubricating oil.....						1,433.0
Cost per kilowatt-hour for fuel, lubrication and labor.....						\$ .0091

to 768-kilowatt-ampere generators, and operate at 225 r. p. m. The exciters also are direct connected. Selection of the necessary auxiliary equipment was made with a view to insuring proper operation and at the same time not to overburden the plant

oil. Synchronization is obtained by electric speed changers operating from the switchboard. That the equipment was well chosen has been proved by operating results and costs. Records kept for the last eight months of 1929 and the first two



Interior View of Power Plant at Tarboro, N. C.

### Acquires Texas Utility

Del Rio, Tex.—The remaining outstanding common stock of the Texas Gas Utilities Co., producing natural gas in the West Texas field and distributing it in Val Verde, Dimmick, Maverick and Zavalla counties, has been acquired by the Appalachian Gas Corp., New York, making the former company a wholly-owned subsidiary of the latter. Properties of the Texas Gas Utilities Co. include approximately 200 miles of pipe line and distribution systems in Del Rio, Eagle Pass, Uvalde, Crystal City, Carizzo Springs and Winter Garden, all in Texas.

### \$600,000 Unit of \$3,000,000 Program

Hampton Roads, Norfolk, Va.—Bids will be opened December 3 by the Bureau of Yards and Docks, Navy Department, Washington, on the first unit of a \$3,000,000 building program at the Hampton Roads Naval Training Station. This unit will include barracks and mess hall to cost about \$600,000.



# IRON, STEEL AND METAL MARKET

## Steel Market Dull to the Point of Apathy

Pittsburgh, November 10—[Special.]—From August to September the rate of steel production decreased 7.3 per cent while from September to October the decrease was 8.6 per cent. Further, and seasonal, decreases are to be expected to the end of the year, making so low a rate that there will be practically no possibility of anything but an upward rebound in January, which would be strictly in accord with the precedents.

October production of steel ingots was at an annual rate of about 31,750,000 gross tons, just 50 per cent of the capacity rating at the beginning of this year, or at a lower percentage of present capacity, as there has been some increase, while there is further new construction under way. The present rate is less than the October rate, say 45 to 46 per cent of capacity and is about 53 per cent of last year's average rate.

Usually steel has an autumn increase in activity. The seasonal influence existed this year but was offset by a decline in general business activity. At this time of year, by rule, there should be seasonal decrease and that coupled with decreasing business activity makes a double influence so that production is dropping rather markedly.

Aside from the steel market being dull in point of tonnage it is dull in its general aspect, there being an air of apathy. There is a minimum of correspondence, orders being frequently mailed with no accompanying letter. Purchasing agents of steel companies report that they are not being visited by salesmen to anything like the usual extent. Business is just being allowed to take its course.

Automobile production continues to slip but this is of little consequence to the steel industry, as for two or three months past the industry has been taking very little steel. Apparently there has been some further clearing up of stocks.

The agricultural implement industry is operating a little better than in the summer, but still at a low rate. There should be some seasonal improvement after the first of the year.

For several months production of line pipe, chiefly for natural gas but partly also for gasoline and oil, was at capacity, but in the last few weeks there has been a sharp decrease and there will be relatively light production over the winter months. There are many projects, but financing is not easy and it is problematical when the new buying season

will open and how heavy the buying will be.

Fabricated structural steel has lately been making a better showing than in September, when lettings as officially reported were far below the smallest of the first eight months of the year, the eight months having in fact run close together. New projects reported last week coming up for bidding made a very large total indeed, 104,000 tons. This included 35,000 tons as the first section of the big subway project in Chicago, 24,000 tons for the Field estate building in Chicago and 15,000 tons for an elevated highway on the west side of New York City.

From time to time one steel product or another has shown a little drop in price but the sum total of declines in the last few months does not amount to much. The two bad features about the steel market are that certain prices are already at around cost; in wire, sheets and strips, and that there is frequently deep cutting on plates and shapes for fabricated structural jobs, the small lot market being held but not amounting to a great deal in point of tonnage.

The market in general is not being subjected to much of a test as to price stability because orders placed are so small that it is not worth while to barter. Recently hopes arose that prices could be stabilized and perhaps even advanced some for the new year, but these hopes are far from strong. Prices should be higher, in view of costs, and particularly the higher cost due to light operation and rotating employment to give all men some work, and probably the majority of buyers would not object.

## Zinc Price Rises—Increased Sales of Copper for Export

New York, November 10—[Special.]—The rise in the price of zinc has been the principal feature of the metals situation. By the middle of the week it had reached 4.50c per pound, East St. Louis, as against 3.95c a week before, a rise of \$11 per ton, due to reports that producers were to make drastic curtailment of production immediately. Higher prices finally brought in better demand for the metal, it being a tradition of the zinc trade that consumers never gauge the market bottom but buy only when a substantial price advance has been staged.

In copper the feature was the brisk selling for export. Sales were 5,000 to 6,000 tons on some days. Foreign consumers would in fact have purchased

more except for the fact that Copper Exporters, Inc., were limiting amounts they would sell. Domestic selling was equal in tonnage to export sales. Copper prices have continued unchanged at 9½c internal and 9.80c, external.

Lead has been extremely dull with prices unchanged. Tin has been on a constant decline, more recently because of an unfavorable interpretation of the October statistics, which were favorable on the surface but which did not stand up under scrutiny.

The pace of the steel industry dropped 2 to 3 points to 47 or 48 per cent of capacity and declines on the New York Stock Exchange did not have a reassuring effect, much as the business world would like to have the exchange ignored.

October statistics have appeared in the case of tin and zinc. The world's visible supply of tin declined some 475 tons, following declines in other recent months. However there were evidences that production has not been cut to the extent hoped. Following the statistics the London tin speculators took a bearish attitude and interpretation, which was followed in this country. The world's supplies at the end of last month came to 39,676 tons.

Surplus stocks of slab zinc in the United States gained 8,285 tons to 141,232 tons, the largest supplies in the history of the industry. Despite rising stocks in all the metals, zinc is the only one in which the surplus has exceeded all former tonnages. However the October statistics also reveal that the number of active retorts at the close of the month was 41,004, a decline by nearly 4,000 retorts and the smallest number in operation in several years. On this phase of the figures the prices of zinc have risen rapidly.

Statistics pertaining to copper will be issued Wednesday by the American Bureau of Metal Statistics and no change in trends is looked for. As the week progressed the copper producers became more and more reserved about selling. Late in October the maximum amount allotted for export was 6000 tons daily but last week Copper Exporters, Inc., were restricting the total to slightly over 3000 tons.

The conferences between Belgian, American and Canadian copper producers continued at New York. According to the gossip in copper circles, the first meetings proved unsatisfactory but the later conferences proceeded more optimistically. American producers are confident that some satisfactory agreement will eventuate whereby a further sharp cut in production will take place, particularly on the part of the Belgian-



controlled African producer, known as Katanga.

American copper producers were interested only in prompt deliveries or in late first quarter and second quarter shipments. The prompt buying was for piecing out stocks on hand. The great bulk of needs for November, December and January have been taken care of by users. Though producers were less inclined to sell at 9½¢ per pound, consumers were at the same time less anxious to buy.

Custom smelters, the class of producers which must make sales daily to keep an even balance between intake of ore and shipment of finished product, disposed of the bulk of their sales to foreign users. The week's copper sales have been estimated at 61,000 tons, a large total, almost evenly divided between home and European markets. Sales have been the largest since July.

The next change in copper prices probably depends on the outcome of the curtailment conferences. Failure of the conferences would probably mean a lower price and a survival of the fittest among producers. An agreement which would sound successful would probably cause a marking up of the quotation.

Tin consumers have been buying in moderate proportions in the declining market. Lead sales were better in volume than the week before, with prices unchanged. Sales of zinc have been the best in six weeks.

The minor metals have been virtually unchanged, though silver has been selling in the 36's rather than in the 35's, a price of 36½¢ having been reached early in the week, reacting later to 36½¢.

### Scrap Iron and Steel Affected by Slow Market for Pig Iron

Birmingham, Ala., November 10—[Special.]—While sentiment is improved, actual business continues the same; pig iron is selling in small lots and the aggregate tonnage moving is not much under the make. Only eight blast furnaces are producing foundry iron, with two larger iron-makers turning out basic. Home consumption is also unchanged. Foundries and machine shops still report some lagging while other melters of pig iron are reporting no change in general conditions.

Base price of pig iron in the home territory is still \$14 per ton, No. 2 foundry. The slow pig iron market has affected scrap iron and steel, with prices weak and business lacking in activity. A little heavy melting steel was noted moving recently, with the best quality bringing \$11, just one dollar less than obtained several weeks ago. Stove plate

is below \$10, too, while other scrap on the list is weak.

Steel mill operations of the district have been on a 45 per cent capacity basis for some time. Sheet mills have been kept quite busy, with orders still steady. Plate is in fairly good demand and other shapes are reported looking up a little. Structural steel fabricators receive two or more orders of tonnages above the 100 mark weekly and with numerous contracts for local and nearby work are maintaining a splendid schedule, everything considered. Reports are current that immediately on the turn of the year some heavy construction work is planned and steel will be required. Louisiana promises to be a good market for a while on steel in various shapes, as port improvement and highway construction and State buildings are planned. Road building in Alabama, also bridges in Alabama, Tennessee and Kentucky mean additional activity.

The coal industry is gaining slowly. DeBardeleben Coal Corporation gave its steel steamship "DeBardeleben," formerly known as the Bremerton, a trial trip in the river at New Orleans. This steamship was purchased from the United States Shipping Board and was remodeled in New Orleans and equipped with mechanical loading and unloading

machinery. It has a capacity of 7500 tons and will carry coals from Pensacola, Fla., the base, to Key West and to the ports of Texas. Numerous trips are planned, orders having been taken already for more than 500,000 tons. The Frisco Railroad is cooperating in handling the coal. A number of prominent business men and bankers of Birmingham attended the trial trip at New Orleans. The plan is to replace oil with coal as fuel in industries in Florida and elsewhere.

#### PIG IRON QUOTATIONS.

No. 2 foundry, 1.75 to 2.25 per cent silicon, f. o. b. furnaces, \$14.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$14.50; iron of 2.75 to 3.25 per cent silicon, \$15.00; iron of 3.25 to 3.75 per cent silicon, \$15.50.

#### OLD MATERIAL.

Old steel axles .....	\$14.00 to \$15.50
Old iron axles .....	15.00 to 16.00
Old steel rails .....	12.00 to 12.50
Heavy melting steel.....	10.00 to 11.00
No. 1 cast.....	10.00 to 11.00
Stove plate .....	8.50 to 9.50
No. 1 railroad wrought....	9.50 to 10.00
Old car wheels .....	10.00 to 11.00
Old tramcar wheels .....	10.00 to 11.50
Machine shop turnings.....	7.50 to 8.00
Cast-iron borings .....	7.50 to 8.00
Cast-iron borings (chem.)..	12.50 to 13.00
Re-rolling rails .....	12.50 to 13.00

Bids will be opened December 3 in the office of Jas. A. Wetmore, Acting Supervising Architect, Treasury Department, Washington, to erect a \$425,000 post office and court house at Clarksburg, W. Va.

## Census of Sulphur Industry

The Bureau of the Census announces that the production of sulphur in the United States in 1929 by companies engaged in the mining of this mineral amounted to 2,439,378 long tons, valued at \$36,527,469 (f.o.b. mine price). These figures represent increases of 104.9 per cent and 103.7 per cent, respectively, as compared with 1,190,575 tons, valued at \$17,935,882, reported for 1919, the last preceding census year.

The States in which sulphur was produced, ranked in the order of quantity and value of product, were Texas, Nevada, and Utah. The sulphur was obtained for the most part by means of

the Frasch process, but a small portion was produced by open-cut or underground mining. Texas produces most of the sulphur mined in this country.

The number of wage earners (average for the year) employed in 1929 by companies engaged in the production of sulphur was 1789. Salaries, wages, and contract work amounted to \$4,260,860, and with supplies, fuel, and purchased electric current, represented an operating expense of \$12,248,205. An amount of \$630,982, included for the most part in expenses reported, was charged to development work by the operating companies.

	1929	1919	Per cent of increase
Number of enterprises .....	*7	4	....
Salaried employees and wage earners:			
Salaried employees .....	297	144	106.2
Wage earners (average for the year).....	1,789	1,129	58.5
Principal expenses:			
Salaries .....	\$941,988	\$413,015	128.1
Wages .....	\$3,308,603	\$1,682,174	96.7
Supplies, fuel and purchased electric current...	\$7,987,345	\$4,216,330	89.4
Contract work .....	\$10,269	.....	....
Horsepower rating of power equipment:			
Total .....	32,368	15,291	111.7
Sulphur mined:			
Long tons .....	2,439,378	1,190,575	104.9
Value .....	\$36,527,469	\$17,935,882	103.7
Ratio (per cent) of cost of supplies, fuel and purchased electric current to value of sulphur mined	21.9	23.5	....
Ratio (per cent) of wages to value of sulphur mined	9.1	9.4	....
Development work .....	\$630,982	\$56,478	....

\*Does not include enterprises reporting a value of product under \$2500.

# HIGHWAYS AND MOTOR TRANSPORT

## Replace Substructure of Bridge Without Interrupting Traffic

**T**HE North Carolina State Highway Commission, W. L. Craven, bridge engineer, Raleigh, is replacing the untreated timber bents of a 5100-foot bridge over the Trent River at New Bern, with creosoted pile bents, without closing the structure to traffic. The bridge was built by the county and acquired by the State in 1923, when it had been in use for many years, making it necessary to cut off existing piling at water level and build up untreated timber bents on caps placed on the cut-off piling. These untreated bents have served for seven years and are now being replaced as the first step in complete reconstruction of the bridge. Old bents, consisting of four piles, are replaced by three creosoted piles spaced about nine feet six inches, bringing the outer piling alongside the outer edge of the 18-foot over-all roadway. On each side of the roadway are two 15-inch, 42-pound, I-beams, 40 feet long extending over two spans. The two I-beams of each set are placed eight inches apart to permit running a 2-inch bolt five feet long, threaded 12 inches at each end, down through beams and deck, engaging the false caps placed each side of the bent to be removed. Each false cap is made of two 10-inch channels placed three inches apart, flanges out, these being blocked out with three by 10-inch plank and bolted together, the blocking extending only part way, leaving an open space for bolts near the ends. Steel plates, 12 by 12 inches by  $\frac{5}{8}$ -inch are placed across the flanges of I-beams and

channels to take the bearing of the bolt heads against them and after the bolts are drawn up, the bent under the center of the I-beam girders is removed.

A floating driver forces down the outside piling as close to the edge of the bridge as possible, a hole is cut in the center of the roadway, leads are placed in position and the third pile of the bent is driven. The bent is cut off immediately and the hole planked up. During this operation there is a clearance between the leads and temporary girders at the outer edge of the roadway of about seven feet six inches, permitting operation of vehicles. The three new piles are capped with a 10 by 12-inch creosoted pine cap 23 feet long, sufficient for a future roadway 20 feet wide. The 3-inch by 10-inch by 24-foot sway bracing is bolted on in the customary manner and extends up on the caps. Alternate spans are tower-braced with bracing of the same size. When a bent is completed the false caps on either side are let down, allowing the stringers to rest on the new cap. The girders are moved along one span length and the same procedure is repeated on the next bent.

The total length of 5100 feet includes one 120-foot draw span, and the trestle spans average about 17 feet in length. Piling, treated with 18-pound Grade No. 1 coal-tar creosote, range from 35 to 50 feet in length, all new timber being treated with 12-pound creosote per cubic foot by full-cell process. Cost of the work is said to be under \$200 per bent, including all material and the expendi-

ture of about \$1100 involved in adapting driving equipment.

Work was planned and carried out under supervision of the State Bridge Maintenance Department, C. B. Taylor, bridge maintenance engineer, Raleigh, and K. R. Scott, assistant. R. E. Snowden, Kruston, N. C., is district engineer in charge of work in the district, and O. F. Yount, is superintendent in charge.

When the substructure is completed it is planned to replace the present untreated superstructure with an asphaltic concrete wearing surface and a new creosoted timber superstructure.

The following firms are supplying materials: Creosoted lumber and piles, Taylor-Colquitt Co., Spartanburg, S. C.; Carolina Wood Preserving Co., Charleston, S. C.; North State Creosoting Co., Charlotte, N. C.; Eppinger & Russell Co., Jacksonville, Fla., and New York; Gulf States Creosoting Co., Hattiesburg, Miss.; Georgia Creosoting Co., Louisville, Ky.; hardware, Pittsburgh Screw & Bolt Corp., Pittsburgh, Pa.; untreated lumber, J. M. De Vane & Co., Fayetteville, N. C., and Snow Lumber Co., Norman, N. C.

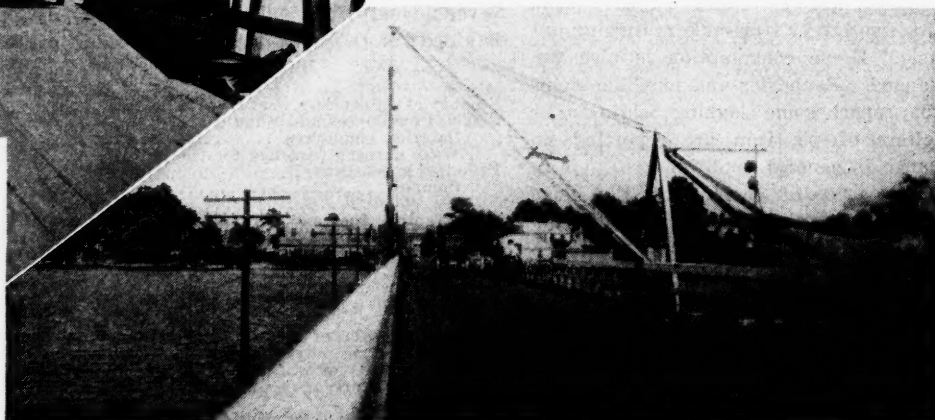
### Baton Rouge to New Orleans

Baton Rouge, La.—Reporting on progress of work on the new Baton Rouge-New Orleans airline highway and work in contemplation, Chairman O. K. Allen of the Louisiana Highway Commission, announces that all concrete paving and bridge construction will have been completed by January, 1932. The completion of this route will annually save large sums of money for automobile owners in the state and will reduce the distance between the two cities by 38 miles.



Above Is Shown Method of Placing the Third Pile of the Bent Through Hole Cut in Center of Roadway

Pile Driver at Work on Substructure of Bridge Which Crosses the Trent River at New Bern, N. C.





# AVIATION, AIRPORTS AND AIRWAYS

## Photographic Contract Covers 9,000 Square Miles

The Curtiss-Wright Flying Service, New York, received recently through Colonel F. B. Wilby, United States Engineers Office, Memphis, the largest aerial photographic contract of the season. The contract is to be carried out in connection with the Government's Mississippi River Flood Control program and covers approximately 9000 square miles of territory. Last year the Curtiss-Wright interests completed 8500 square miles of aerial survey work under Colonel Wilby.

The new survey is to cover 36 quadrangles between the White River and the Mississippi, the northern boundary being about 17 miles north of Cairo, Mo., the survey extending over portions lying in the states of Kentucky, Tennessee, Arkansas and Mississippi to a point some 68 miles south of Memphis. Pine Bluff, Ark., is located in the southwest corner of the project. Photographs will be made at a scale of one-inch equaling approximately 1500 feet. More than 14,000 separate exposures will be required and over 56,000 photographic prints will be made for delivery.

Principal operating point of the company will be its Memphis base. Four Curtiss-Robin planes, specially built for photographic work, have been assigned to the job. These planes are capable of reaching an altitude of 12,000 feet in 38 minutes and remaining in the air for eight hours. It is estimated that over 50,000 miles of flying will be required to complete the work; about 25 per cent will be completed in the next 30 days; an additional 25 per cent within the following 30 days, and the entire project finished in five months, allowing time



## Textile Head Makes Business Trips by Airplane

A Curtiss-Robin airplane is being extensively used for business trips by C. L. Amos of the Melrose Hosiery Mills, High Point, N. C. Recently Mr. Amos made a sales trip to St. Louis in 6½ hours, whereas it would have taken 27 hours to go the same distance by train. Frequent trips are made to Atlanta from High Point, the distance being covered in three hours. Mr. Amos is now on an extensive tour, calling on the firm's connections in Atlanta, Birmingham, Montgomery, New Orleans, Houston, San Antonio, Dallas, Little Rock, Memphis, Kansas City, St. Louis, Chicago, Detroit, Buffalo, Rochester and New York. Traveling by plane it is anticipated the circuit should be completed in 10 days.

for delays due to winter weather. It is planned that Colonel Wilby and his staff of engineers, with the assistance of the photographs, will complete their line maps and topographic maps of the area within a period of one year.

The fact that the United States Engineers at Memphis used 8500 square miles of surveys last year, and this year increased the area by 10,000 square miles,

is cited as an indication of the economic value of present methods of aerial surveys.

## Airships to Operate in South

Three of the airship fleet of the Goodyear Zeppelin Corp., Akron, Ohio, will operate in the South during the coming winter. The ships will begin their southward journey from their home base in the near future.

The Defender and the Puritan will be based at Miami, Fla., while the Vigilant will return to its winter base at St. Petersburg, Fla. The Puritan is scheduled to go from Akron to the army lighter-than-air base at Langley Field, Va., where it will remain several weeks, visiting cities in Virginia and the Carolinas before proceeding down the east coast to Miami. The Defender will fly from Akron to the Goodyear base at Gadsden, Ala., non-stop, and after refueling proceed directly to Miami. The Vigilant will fly from Akron to Gadsden, and visit cities in Alabama, Georgia and Tennessee for several weeks before moving on to St. Petersburg. Later it is planned to make a trip to the Mardi Gras at New Orleans.



One of the First of 14,000 Exposures to Be Made by Curtis-Wright Flying Service on Flood Control Survey for U. S. Engineers Office, Memphis



## NEW AND IMPROVED EQUIPMENT

### Machine to Test Welds

In connection with the Union Carbide and Carbon Research Laboratories, Inc., the Oxyweld Acetylene Co., New York, has developed a portable tensile machine for testing welds. It weighs 165 pounds, measures 28 inches in overall length and 6¾-inches in maximum diameter. The machine is self-contained, entirely enclosed and when prepared for shipment presents a comparatively smooth cylindrical surface. The machine consists of a tubular compression member with a set of grips in the head and a hydraulic cylinder block in the base. The cylinder block contains a communicating pump and a cylinder directly machined into a single block, the cylinder pressure operating a piston carrying a second set of grips. The specimen to be tested is placed between the jaws which have spring grips. The release valve is closed and the pump handle at the end of the cylinder is moved back and forth. When a test is completed the pressure may be released by a valve and the piston returned to its original position by using the pump handle as a lever. Because of

man may operate the entire mill by throwing a pass master switch which starts the screws turning for the first pass. Sights indicate when everything is ready. After the beam of iron or steel

has passed through the mill, the operator moves the pass master switch to the second position, and so on. By throwing the switch to the off position, the operator may resort to manual control.

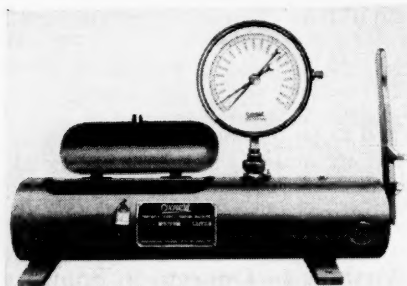
### Carter Transport Trailer

A transport trailer made for Farmall tractors has been introduced by the Carter Manufacturing Company, Memphis, Tenn., manufacturer of Carter trailers and Continental winches. It makes unnecessary the use of special trucks or truck bodies, say the manufacturers. Salient features of the unit are low center of gravity, rugged construction, and one-man operation. It is designed for use with an International

6-speed truck with stake body, the trailer carrying the tractor being hooked on and the implements carried on the truck. Length of the trailer is 12 feet, width 7 feet, height of frame from ground 22 inches, weight empty 1250 pounds, size of tires 30 by 5 or 32 by 6, standard International wheels and rims interchangeable with International 6-speed truck. Bearings are Timken-Taper roller; skid boards, 2 by 10, of seasoned oak and other construction of steel.



Manufactured Especially for Farmall Tractors



A Portable Machine for Field or Shop Use

the necessity of periodic tests, and as the portability of the machine is an important factor, the unit is stated to be of much value in overland and public utility pipe line construction.

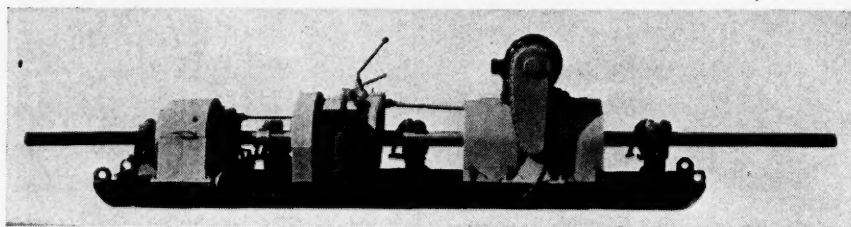
### Automatic Controls for Steel Mills

The Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has produced six automatic screw-down controls for properly adjusting rolls in steel mills. As ingots become smaller at each passage, the rolls must be brought closer together. With automatic control, a predetermined amount of screw-down is arranged for by plugging in leads at certain points and, when the mill is in operation, this screw-down is provided automatically at correct intervals. By use of this apparatus, one

### Electrically Driven Machine for Descaling and Priming Pipe

The W-K-M Company, Inc., Houston, Texas, announce the production of a new pipe-cleaning (descaling and priming) machine designed for use on gas and oil pipe of one-half inch to four inches in diameter. This 0-4 unit, produced to meet public utility needs, is the first machine the company has built for small-size pipe and completes the W-K-M group of machines, for service or sale, to handle any size pipe from one-half inch to 24 inches. Mill-type in design, with a heavy base frame of structural steel and electrically driven, the machine cleans, brushes and primes

seriatim in one automatic operation. The operating unit consists of a cleaning head with 12 spindles of 30 cutters each, which rotates around the pipe at 500 r.p.m. Following this, the pipe runs through a brush head of planetary type, each brush revolving on its own spindle at the rate of 1500 r.p.m. and the head itself rotating around the pipe at 150 r.p.m., thoroughly brushing the area. The unit is equipped with four speeds forward and one reverse, all working parts enclosed and running in oil. It has a maximum pipe production speed of 25 feet per minute and with the addition of another cutter head will turn out 50 feet per minute, while the addition of a third cutter head will increase production speed to 75 feet per minute.



W-K-M 0-4 Pipe Cleaning Machine

# CONSTRUCTION DEPARTMENT and NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

## Airports, Airplane Plants, Etc.

Ala., Birmingham—City, A. Johnston Hawkins, City Engr., has not set date on which to receive bids for airport; plans now being developed. 10-9

D. C., Anacostia—Newport Contracting and Engineering Co., Inc., Lee Hall, Va., reported, has contract at \$12,662, for boiler installation and heating systems at Naval Air Station; Gray Artesian Well Co., Pensacola, Fla., at \$13,133 for well.

Fla., Pensacola—Bureau of Yards and Docks, Washington, D. C., reported, soon call for bids for improvement to Naval Air Station; cost \$135,000.

La., New Orleans—State, Huey P. Long, Gov., voted amendment to State Constitution authorizing Orleans Levee Bd. to issue \$1,000,000 bonds for airport on Lake Pontchartrain. 9-25

Md., Baltimore—City, Wm. F. Broening, Mayor, voted \$2,500,000 bonds for airport.

Mo., St. Joseph—Missouri Valley Airline, Inc., chartered; Robt. E. L. Masters, 2811 Faraon St.

Okla., Tulsa—City, George Watkins, Mayor, plans purchase of field, develop airport.

Tex., Port Arthur—City, J. W. O'Neal, Mayor, reported, plans airport, athletic field and seaplane base.

Tex., San Antonio—Mexican Central Airways, Inc., chartered; Leo Goodwin, 1400 Grayson St.; C. K. Carruthers.

Va.-Tenn., Bristol—Bristol Seal & Iron Works, Inc., successor to Twin City Boiler Works, Inc., has contract for all-steel airplane hangar for airport; steel work in process of fabrication and field construction to begin shortly.

W. Va., Welch—City, reported, plans development aviation field at Coney Island Park; John W. Blakely, Mayor.

W. Va., Wheeling—Ohio County defeated \$900,000 airport bonds. 8-21

## Bridges, Culverts and Viaducts

### Proposed Construction

Ala., Gadsden—City Council authorized Percy Todd, City Engr., to build bridge over Black Creek, Chestnut St.; creosoted piles, conc. floor.

Fla., Jacksonville—Duval County Commrs. probably hold election about Dec. 15 on bonds for \$4,000,000 St. Johns River bridge; Ash-Howard-Needles & Tammen, Consult. Engr., 55 Liberty St., New York. 10-23

Georgia—State Highway Bd. receives bids for 3 bridges. See Roads, Streets and Paving.

La., New Orleans—State, Huey P. Long, Governor, reported, expend \$17,000,000 to \$21,000,000 for bridge over Mississippi River. See Financial News Columns.

La., New Orleans—U. S. Engr. Office, First New Orleans Dist., opens bids Dec. 3 for railway swing bridge over site of Louisiana-Texas Intracoastal Waterway Bayou Sale, Branch of Texas and New Orleans R. R. Co., near North Bend.

La., New Orleans—Gulf, Mobile & Northern R. R. Co., L. P. O. Exley, Ch. Engr., Mobile, Ala., probably build bridge over Lake Pontchartrain, to cost several millions.

Maryland—State Roads Comsn., L. H. Steuart, Sec., Baltimore, has low bids for 4 bridge projects: Baltimore County—electrical work on bridge over York road, Cockeysville, B-168-43, Electromechanical Co., 432 N. Calvert St., Baltimore, \$1270; Harford County—bridge floor, etc., road Harmony Church to Darlington over Deer Creek, H-104-42, W. W. Truitt, Lincoln City, Del., \$6356; bridge floor over Deer Creek road, Churchville to McCann's Corner, H-103-42, W. W. Truitt, \$1945; Montgomery County—bridge extensions road, Silver Spring to Burnt Mills over Northwest Branch, M-160-311, A. C. Conaway, Savage, Md., \$5099. 10-30

Md., Baltimore—City, Wm. F. Broening, Mayor, expend \$2,000,000 for bridges and paving. See Financial News Columns.

Mississippi—State Highway Comsn., Jackson, opens bids Nov. 25 for building culverts and bridges on Laurel-Richton road, Jones County, Work Order 147.

Missouri—See Gas and Oil Enterprises.

Missouri—State Highway Comsn., has low bids for 15 bridges. See Roads, Streets and Paving.

Miss., Natchez—Adams County Supvrs., W. H. Hale, Clk., open bids Dec. 2 for bridge over Twin Bayou, Lower River road, First Dist.

N. C., Charlotte—See Bridges, Culverts and Viaducts.

Tenn., Memphis—City, Wm. B. Fowler, Engr., denies report City plans bridge over Missouri Pacific tracks, Lauderdale St. 10-9

Tex., Port Arthur—U. S. Engr. Office, Galveston, Jefferson County, B. B. Johnson, County Judge, and Southern Pacific Lines (In Texas and Louisiana), Texas and New Orleans R. R. Co., R. W. Barnes, Ch. Engr., Houston, start building \$270,000 draw bridge in November over Intracoastal Canal, south of West Port Arthur, to serve railroad and vehicular traffic; plans and supervision of construction by railroad. 8-7

Va., Gloucester Point—Yorktown Bridge Co., William T. Ashe, Pres., Gloucester Point, build toll bridge over York River, Yorktown to Gloucester Point; Robinson & Steinman, Engr., 117 Liberty St., New York. 10-23

### Contracts Awarded

Ala., Mobile—Alabama, Tennessee & Northern R. R. Corp., W. Toxey, Ch. Engr., Mobile, reported, let contract to Virginia Bridge & Iron Co., Roanoke, Va., for 350 tons struc. steel for 2 bridges.

Alabama—State Highway Comsn., Woolsey Fennell, Director, let contracts for 2 bridge projects: Coffee County—overhead bridge over A. C. L. Ry., between Elba and Samson, S. P. 464-A, Ed Pettus, Montgomery, at \$3766; Winston County—approaches to Rocky Creek bridge, S. A. P. 184, E. N. Smothers, Addison, Ala., 6295.

Miss., Hattiesburg—Forrest County Supvrs. let contract to Ingalls Iron Works Co., 720 Fourth Ave., S., Birmingham, Ala., for bridge over Black Creek near Camp Dantzler, Purvis McLaurin Highway. 10-23

Mo., Ferguson—McClintic-Marshall Co., Oliver Bldg., Pittsburgh, Pa., has contract for 200 tons struc. steel for bridge of Wabash Ry. Co., M. F. Longwill, Ch. Engr., St. Louis.

Mo., Kansas City—McClintic-Marshall Co., Oliver Bldg., Pittsburgh, Pa., has contract for 1000 tons struc. steel for Oak St. viaduct.

Okla., Coyle—Oklahoma Highway Comsn., A. R. Losh, Engr., Oklahoma City, let contract to Schleicher Bridge Co., Clay Center, Kans., for bridge, north of Coyle, Payne-Logan Counties, 11 80-ft. steel trusses on conc. substructure with necessary grading and paving approaches, F. A. P. 199-Br., S. H. 33. 10-9

Tenn., Knoxville—McClintic-Marshall Co., Oliver Bldg., Pittsburgh, Pa., has contract for 465 tons struc. steel for Henley St. bridge; Booth & Flinn, Gen. Contr., 1924 Forbes St., Pittsburgh, Pa. (Contract noted let 9-8.) 10-9

Tex., Houston—Harris County Houston Ship Channel Navigation Dist., E. M. Mourseund, Engr., let contract to Lone Star Construction Co., P. O. Box 1891, for 80-ft. deck girder trestle approaches over Greens Bayou, at \$31,612.

Tex., San Antonio—City, Paul Steffler, Street Commr., build pedestrian bridge, Guilbeau St. with own forces. 11-6

## Canning and Packing Plants

Fla., Fort Pierce—Fort Pierce Growers Assn., Homer Needles, Pres., reported, completed plans for terminal; cost \$225,000. 10-2

Fla., Lakeland—Patterson Packing Co., capital \$15,000, incorporated; E. M. and M. Patterson, A. R. Carver.

## Clayworking Plants

Fla., Haines City—Paul Smith, P. O. Arcade, reported, has contract for canning plant for Polk Canning Co., Tampa Road & A. C. L. Tracks; cor. iron and frame walls; 1 story; 130x60 ft.; metal roof; cost \$12,000. 10-16

Ga., Macon—Southern Brick & Tile Co., capital \$300,000, incorporated; W. E. Dunwoody, Rivoli St.

Miss., Charleston—Mississippi Clay Co., capital \$3,000,000, incorporated; Ned. R. Price, J. W. Saunders, H. M. Stuart; plans establishing plant in Tallachatchie county for manufacture china, pottery and other clay products; will use Jackson field fuel to operate.

## Cottonseed-Oil Mills

Ala., Sheffield—Southern Cotton and Oil Co., reported, let contract to Richardson Lumber Co., Florence, for construction of cotton seed warehouse, 60x160 ft., on W. 16th St.; cost \$20,000.

## Drainage, Dredging and Irrigation

Fla., Jacksonville—U. S. Engr. Office has low bid from Clark Dredging Co., 357 S. W. North River, Drive, Miami, for dredging approx. 3,406,000 cu. yd. place measurement, Indian River portion, Intracoastal Waterway, Jacksonville to Miami. 10-9

Md., Baltimore—City, Wm. F. Broening, Mayor, voted \$10,000,000 bonds for harbor improvements.



Miss., Clarksdale—Comms. of Coahoma Drainage Dist., Coahoma County, Office of Maynard, Fitzgerald & Venable, let contract to Midland Construction Co., Clarksdale, at 10 cents per cu. yd. for 31,800 cu. yd. construction of Lateral No. 20, 6000 ft. long, 4-ft. bottom, side slopes 1 to 1. 10-30

S. C., Charleston—Treasury Dept., Office of Supvg. Archt., Washington, D. C., let contract to Coastal Construction Co., Inc., Gulfport, Miss., at \$17,593, for dredging boat basin, U. S. quarantine station, James Island. 10-30

Tenn., Knoxville—See Drainage, Dredging and Irrigation.

Tex., Brownsville—Cameron County Water Control Dist. No. 18, Lloyd Park, Pres., Olmitte, votes Nov. 17 on \$482,000 bonds for improvements.

Tex., Brownwood—Brown County Water Improvement Dist. No. 1, F. S. Abney, Pres., H. G. Lucas, Sec., has following low bids under consideration for earthen reservoir dam across Pecan Bayou: Standard Paving Co., Tulsa, Okla., \$590,000; Miller Hutchins, Sellers, Minn., \$595,000; Gifford Hill & Co., North Texas Bldg., Dallas, \$597,000. 10-2

Tex., Robert Lee—Irrigation committee including John Q. McAdams, Winters; Tad Richards, Oak Creek; W. W. McCutchen, Robert Lee; C. C. Holder, R. E. Hickman and Robert Knierim, all Bronte, having survey made of Colorado River irrigation project embracing about 150,000 acres in vicinity of Robert Lee, Bronte, Oak Creek and Winters, by Municipal Engineering Co., Dallas; Ulen Co., Lebanon, Ind., sponsoring survey.

Tex., Galveston—U. S. Engr. Office let contract to Linde Dredging Co., A. N. I. Bldg., Galveston, at \$16,800, for 112,600 cu. yd. dredging, Dickinson Bayou channel. 10-2

Tex., San Antonio—City, Paul E. Steffler, Street Commr., considering irrigating approx. 12,000 acres with effluent from sewage treatment plant; negotiating with New York capitalists for developing.

Tex., Sinton—San Patricia County Drainage Dist. No. 3 expend \$30,000. See Financial News Columns.

### Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.

Ga., Augusta—Paul M. Thayer and associates, reported, applied for 50 yr. franchise.

Ky., Paris—City voted \$150,000 bonds for construction of electric power plant. 10-30

Miss., Water Valley—Drone Engineering Co., Madison, Ill., reported, has contract for white way system. 11-6

Mo., Kansas City—Municipal Service Co., incorporated; J. F. Pritchard, Dwight Bldg.

Mo., Sikeston—City receives bids Nov. 24 for furnishing materials and labor and constructing complete electric light and power plant; W. A. Fuller Co., Engrs., 2916 Shendoan Ave., St. Louis. See Want Section—Bids Asked.

N. C., Kings Mountain—City receives bids Dec. 17 for purchase of electric and water systems, now owned and operated by city; information on application to Utilities Engineering & Management Co., 917 Johnston Bldg., Charlotte.

N. C., Morehead City—City, K. P. B. Bonner, Mayor, postponed date of opening bids for sale of electric light plant and water system to Nov. 18. 9-18

Oklahoma—Grand Hydro Electric Co., Wash E. Hudson, Pres., 6th and Peoria Sts., Tulsa, reported, begin construction work about Dec. 1 on \$24,000,000 hydro electric development; first of 4 dams to be on Grand River at Pryor; largest dam will be in Mayes County and will back water into Delaware and Ottawa counties. 7-17

Okla., May—City, Chas. W. Latta, Clk., reported, plans light plant and power line.

Texas—Emery, Peck & Rockwood Co., 208 S. LaSalle St., Chicago, Ill., and 441 Broadway, Milwaukee, Wis., contemplates constructing 3 hydro-electric plants on Colorado River; it is contemplated that Hamilton Dam, located 12 miles from Burnet, will be initially constructed; dam calls for 2½ yr. construction program; head will be approximately 125 ft. with initial installation of 20,000 kw.; dam, including bulkhead and spillway sections, will be 2½ miles long;

reservoir, which will be flooded, will approximate 25,000 acres; present plans call for completion of 2 of the dams down the stream from Hamilton project by time Hamilton dam is completed; 1 at Cummins' Site, with 35 ft. head; other the Marble Falls, with a 50 ft. head; total cost of these projects, including necessary transmission lines, structure, lands, etc., about \$9,000,000; F. A. Dale, Austin, Mgr. 8-14

Tex., Dalhart—West Texas Utilities Co., Abilene, reported, has option on Rita Blanca Lake, Inc., properties; work under way of rebuilding dam, Earl S. Carter, in charge.

Tex., Dallas—Dallas Power & Light Co., reported, let contract to W. E. Callahan Construction Co., Kirby Bldg., for earthwork on dam to be built at Mountain Creek to form lake in connection with \$1,500,000 project. 11-6

Va., Narrows—K. W. & H. T. Lawrence, Salem, will construct conc. dam across Wolf Creek, 300 ft. long and height sufficient to produce 12 ft., head of water.

### Fertilizer Plants

Fla., Frostproof—W. B. Simmons and S. P. Gifford, Third St., reported, has contract for fertilizer plant for L. Lazey, Inc., Fifth St. and R. R.

### Flour, Feed and Meal Mills

Md., Carthage—Green Valley Flour Mill, operated by Joseph E. Robbins, reported, plans rebuilding burned portion of mill. 10-23

Tenn., Newport—City Milling Co., Charles Morrell, reported, rebuild burned mill.

Va., Narrows—Kingrea Brothers, 38 Monroe St., will form corporation; operate flour mill; also considering blending plant for flour and hammer mill for feed grinding. See Want Section—Machinery and Supplies.

### Foundry and Machine Plants

Ala., Dothan—Dothan Machine & Ornamental Iron Works Co., incorporated; Artie Knight, Pearl Page.

### Garages and Filling Stations

D. C., Washington—Firestone Tire & Rubber Co., Akron, O., reported, construct addition to present building 1301 K St., N. W.; 1 story, brick, steel and stucco service station.

D. C., Washington—Kass Realty Co., 1116 Vermont Ave., N. W., erect 1 story conc. block and brick gas station on 4985 Conduit Rd.

Fla., Lake Wales—Buchanan Management Corp., incorporated; M. H. and F. P. Buchanan.

Ga., Atlanta—Wille Reisman, 600 Marietta St., construct filling station 765 Cherokee Ave., S. E.

Ga., Buckhead—A. K. Adams Co., 542 Plum St., N. W., Atlanta, reported, low bidder for filling station for Pan American Petroleum Corp., care Engr. Dept., Rhodes Haverly Bldg., Atlanta.

Mo., Kansas City—Israel Motor Transfer Co., 1912 Grand Ave., erect garage 2211 Grand Ave.; cost \$20,000.

N. C., Oxford—B. & N. Motor Co., capital \$25,000, incorporated; J. M. Blalock, J. H. Nelms.

Oklahoma—Phillips Petroleum Co., Bartlesville, reported, let contract to McMillen & Shelton, Enid, for 8 filling stations, La Verne, Okla., and in various cities in Missouri and Kansas; 1 story, brick, rein. conc.

Okla., Tulsa—Union Transportation Co., J. A. Frates, Pres., 322 S. Cheyenne St., erect bus garage; Joe Stone, Archt., 1624 N. Lewis St.

Tenn., Soddy—Soddy Chevrolet Co., Inc., chartered; J. E. Summers, D. L. McKissick.

Tex., Austin—Firestone Tire & Rubber Co., Akron, O., B. C. Hunt, Constr. Engr., reported, call for bids in Jan. on 1-story, brick and rein. conc.; cost \$10,000.

Tex., Dallas—International Automobile Repair Co. incorporated; M. J. Lewis, Lemon St.

Va., Hopewell—Hopewell Ford Motor Co., I. L. Newsom, Pres., constructing warehouse and display room Cor. Randolph and Commerce Sts.; conc. and brick; cost \$16,000.

Va., Richmond—Lacy Motor Co., Inc., capital \$25,000, incorporated; Collins Denny, Jr., Travelers Bldg.

### Gas and Oil Enterprises

Florida—W. S. Bibb, Birmingham, Ala., has contract for construction 36 miles natural gas transmission line on Pensacola division of pipe line for Southern Natural Gas Corp.,

Watts Bldg., Birmingham, Ala.; contract awarded by Natural Gas Engineering Corp., through L. E. Ingham, Resident Engr.; un-awarded mileage will be constructed by Natural Gas Engineering Corp. and work has been begun by this company in 14 mile swamp. 10-2

Kentucky—Columbia Gas & Electric Corp., 61 Broadway, New York, reported, completing negotiations for purchase of 1,000,000 acres of natural gas producing lands in Eastern Kentucky; lands include former properties of American Rolling Mill Co., Middletown, O., and properties of Inland Gas Corp., Ashland.

Ky., Lawrenceburg—Consolidated Utilities Co. of Kentucky, E. L. Anderson Repr., applied for 20 yr. gas franchise.

Louisiana—Standard Pipe Line Co., Inc., Continental Bank Bldg., Shreveport, constructing pipe line from Moore Station to Louisiana-Texas state line; work consists of one 10-in. line of welded construction; engineering work by Engr. Dept. of company under direction of W. B. Fulton, Ch. Engr.; pipe is Jones & Laughlin seamless plain and pipe for welding of random length; Simmons & Nusser, 515 N. Market St., Shreveport, Contrs.; completion of line by Dec. 15. 10-30

La., Marksville—Moody-Seagraves Gas Co., Esperson Bldg., Houston, Tex., reported, granted 25 yr. gas franchise.

Missouri—Missouri Valley Pipe Line Co., subsidiary of Moody-Seagraves Corp., Esperson Bldg., Houston, Tex., reported, let contract to Frank Parrott, First National Bank Bldg., Dallas, for bridge over South Canadian River 23 miles north of Borger, cost \$86,000; Matthews & Kenan, Consult. Engrs., 1616 Smith-Young Tower, San Antonio; plans constructing 15 bridges in 6 states including Oklahoma, Kansas, Nebraska, Iowa and Missouri at total cost of \$750,000.

Missouri—Urban Service Co. applied to Public Service Comsn., Jefferson City, for permission to operate gas distribution systems in Concordia, Carrollton, Sweet Springs and Hardin; have been granted franchise; will be serviced through pipe line under construction from Ottawa, Kans.; expend about \$200,000.

Missouri—Missouri Public Service Comsn. granted permit to Gas Service Co., 60 Wall St., New York, to construct and operate natural gas distribution system in LaMonte and Knob Noster; cost \$10,000 for each plant.

Mo., Kansas City—Missouri-Texas Gas & Oil Co., capital \$600,000, incorporated; C. W. German, Land Bank Bldg.

N. C., Asheville—Sinclair Refining Co., 45 Nassau St., New York, reported, acquired all stations and property of Koon Oil Co.; plans extending Western North Carolina units; erect storage plant, etc.

Okla., Buffalo—Buffalo Public Service Co., E. F. Camp, Mayor, votes Nov. 12 on granting natural gas franchise.

Tex., Laredo—Foster Barnsley Syndicate, Inc., capital \$60,000, incorporated; Gordon Gibson, Lenore Judkins.

Tex., Tahoka—Nantex Oil Corp. incorporated; J. B. Nance, H. D. Walters, L. B. Dunn.

Tex., Victoria—Utilities Fuel Supply Co., Dallas, reported, has gas franchise from Victoria County Comms. Court for laying pipe line through county, paralleling Highway No. 128 from Refugio County line to city.

Va., Danville—Gulf Refining Co., Frick Annex, Pittsburgh, Pa., reported, plans distributing center at Holly and Linn Sts.; construct 6 tanks with total capacity 87,600 gals.; brick warehouse, 40x60 ft.; garage capacity for 4 trucks and pumping equipment; L. S. Ranson, Engr. in Charge.

Va., Fairfax—Fairfax County Bd. of Supervisors granted permission to Alexandria Gas Co., Alexandria, to lay mains along county highway.

Va., Norfolk—Colonial Oil Co., incorporated; W. H. Ray, Raleigh Ave. and Mantes St.

### Ice and Cold-Storage Plants

D. C., Washington—Terminal Refrigerating & Warehousing Corp., 4½ and D Sts., S. W., J. P. Johnson, Sec., advises store building on 12th St., S. W., is part of general construction and remodeling program now in progress at plant; entire work to cost \$150,000; Schneider-Spliet Co., general contractor, 1416 F St., N. W.; John R. Livezey, Woodward Bldg., has contract for cork insulation work; building will house 15 market stores for handling meats and dairy products; construction by Dec. 31; Pringle & Arnold, Engrs., and Archts., 1315 Half St., S. E., Washington; Fred Ophuls & Associates, 112 W. 42nd St., New York City, planned refrigeration features; all stores have cooler and freezer boxes.



Fla., Tampa—Atlantic Ice and Coal Co. 816 Zack St., reported, acquired plant of Tampa Artic Ice Co.; Consumers Ice Co., 801 Main St., and Crystal Ice and Cold Storage Co., Ruby and Maryland Sts., acquired Citizens Ice Co., Rome and Oak Sts., and Polar Ice and Cold Storage Co., 539 Fifth Ave., and Seminole Ice Co., Thomas St., and Tampa Northern R. R., acquired Purity Springs Ice Co., 4106 Suwanee St.

Ga., Augusta—Atlantic Ice and Coal Co., F. W. Beasley, Pres., 106 Washington St., Viaduct S. E., Atlanta, plans ice plant.

Ga., Macon—Atlantic Ice and Coal Co., F. W. Beasley, Pres., reported, erect ice plant; cost \$50,000; G. A. Roberson, Engr., both 106 Washington St. Viaduct, S. E., Atlanta, in charge construction.

La., Crowley—Louisiana Public Utilities Co., Lafayette, construct \$50,000 ice plant; brick and conc.

Mo., Kansas City—City Ice Co., 21st and Campbell Sts., reported, let contract to Morley Bros. Construction Co., 1653 Bellevue Ave., for extensions and improvements, plant No. 1; cost \$50,000; Charles A. Smith, Archt., Florence Bldg.

Okla., Norman—Quick Kold Corp., Oklahoma Savings Bank Bldg., Oklahoma City, reported, plans \$40,000 ice plant.

Tex., Denton—York Ice Machinery Co., York, Pa., reported, has contract at \$28,317 for ice plant machinery to be installed in Municipal Utilities building; later will let contract for filters.

Va., Ashland—C. S. Luck & Sons let contract to Virginia Ice Machine Co., 3115 W. Carey St., Richmond, for Frick refrigerating plant and cold storage room.

### Iron and Steel Plants

Fla., Jacksonville—Sterling Railway Specialties Co., Inc., capital \$225,000, chartered; J. H. Rice, 728 Gilmore St.; steel and iron products.

### Land Development

Ala., Montgomery—Forest Park Land Co., capital \$15,000, incorporated; Sam M. Engelhardt, 402 Commerce St.

D. C., Washington—Capt. E. N. Chisholm, Asst. Director, National Park and Planning Comsn., reported, plans development of George Washington Memorial Parkway, from Fort Washington to Cabin John; control of about 1641 acres not yet acquired; preliminary plans include 269-acre park along Potomac River in Arlington County, Va.; on Maryland side commission has planned for parkway along lower Potomac from District at Oxon Run along river to Fort Foote and along shore to Fort Washington.

Fla., Bradenton—Murphy Properties, Inc., chartered; G. Murphy, 1103 Ninth Ave.

Fla., Edgewater—Od Realty Co., incorporated; H. R. Strong, F. W. Sultan, W. R. Conklin.

Fla., Fort Lauderdale—Lasolas Properties, Inc., chartered; George C. Crawford, C. L. Waller.

Fla., Fort Meade—M. Rehinder, Inc., chartered; J. H. Wilson, G. E. Walker, V. L. Bass.

Fla., Miami—Allanco, Inc., chartered; D. Milledge, First Natl. Bank Bldg.

Fla., Miami—Sunnyside Groves, Inc., chartered; E. K. Shipp, A. R. Kline, M. Evans, all Security Bldg.

Fla., Miami—Secco Co., Inc., chartered; R. Griffin, 334 N. W. Ninth Ave.

Fla., St. Petersburg—E. B. Ring, Snell Arcade, advises work for which they have contract with Tocobayga Holding Co. for improvements to Tocobayga Country Club (formerly Snell Island) include following: Hydraulic dredging, 1,385,000 cu. yds.; sea wall, 15,000 ft.; paving of streets, 124,765 sq. yds.; water mains, 37,000 ft.; gas mains, 35,000 ft.; completion of bridge across Coffee Pot Bayou at cost of \$50,000; completion of golf club house and addition of kitchen and dining room, professional's quarters, caddy room, swimming pool, 80x40 ft., cost \$47,000; new conc. bridge across canal between units 1 and 2 cost \$5000; new beach club buildings with swimming pool, sand beach and 53 cabanas, cost \$100,000; polo fields, stables and help's quarters, cost \$300,000; no sub-contracts awarded and no materials purchased; Klehnel & Elliott, Seybold Bldg., Miami, Archts., preparing plans for improvements and additions to golf club house and beach club; plans to be completed soon. 11-6

Fla., Winter Haven—Lekereger Hotel Co., W. M. Mabson, Sec., develop 110 acres citrus grove; erect barns, tenant house and house for caretaker; expend \$15,000; H. Wise & Son, Archt. and Contr. 10-30

Ga., Atlanta—K. C. Dann Realty Co., Grant Bldg., developing Parkview Homesites, No. 2; grading and installing streets; water, sewer mains, etc.

Md., Mount Washington, Baltimore—Stonebrook Corp., 1901 Dixon Rd., incorporated; Charles R. Brooks, Washington, D. C.; Geo. Stone, Baltimore.

N. C., Charlotte—George F. and Wilson L. Stratton, Inc., capital \$100,000, chartered; C. A. Cochran, Law Bldg.

S. C., Rock Hill—Cherry Development Co., incorporated; H. J. Martin, Anna Cherry Beaty.

Tex., Austin—City, Adam R. Johnson, Mgr., will expend \$200,000 for park improvements; work under direction of J. L. Gubbels, Architectural Engr., City Hall.

Tex., Houston—City Park Dept. plans improvements to Proctor Plaza Park, including lights, building to house park equipment, wading pool, traffic signal lights.

Virginia—Strathmeade Corp., 611 Fourteenth St., N. W., Washington, D. C., W. O. Galliher and C. H. Galliher, Washington, D. C., Henry Clarke, Gen. Mgr., developing 1311 acres on Lee Highway, Fairfax County; engineering and designing work under direction of J. French Paddock and associates; golf course of 27 holes; public parks, 500 acres for recreational facilities.

Va., Newport News—Mariners' Museum, W. Gatewood, Mgr., plans to develop park in connection with erection of museum buildings, construct dam, lake, roadways, etc. See Buildings Proposed—Miscellaneous.

Va., Richmond—Capital Realty Corp., capital \$50,000, incorporated; Charles B. Keppler, 2922 Grayland Ave.

### Lumber Enterprises

Fla., Groveland—Marshall Timber Co., Inc., chartered; A. D. Marshall, N. E. Marshall.

La., New Orleans—R. F. Mestayer Lumber Co., Inc., capital \$25,000, chartered; R. F. Mestayer, 3034 Paris Ave.

Ga., Cordele—W. R. Turner, Millen, reported, acquired plant of Cordele Sash, Door and Lumber Co.

Md., Baltimore—American Cooperage Co., 141 N. Kresson St., contemplates erecting 1 story, brick mfg. plant, Baltimore and Kresson Sts.

Mo., Bismarck—Ozark Oak Flooring Co., capital \$20,000, incorporated; M. E. and Clyde Ruble.

N. C., Hendersonville—Balmo Lumber Co., Inc., capital \$125,000, incorporated; L. B. Prince, Hendersonville.

### Metal-Working Plants

Tex., Houston—Hastings Oil Tool Co., capital \$125,000, incorporated; J. W. Metzler, 1203 Wichita St.

### Mining

Mo., Eminence—Shawnee Copper Mining Co., reported, plans erection concentrating plant; cost \$100,000.

Mo., Joplin—Shirley D. Mining Corp., incorporated; Fred A. Carmody, Fifth St., Royal Heights.

Mo., Nevada—Standard Rock Asphalt Co., Scott, Kansas; develop 100 acres; install 3 Dr. N. M. Cubbage, Pres., Box 500, Fort unit crusher, mixer, engine, etc. 11-6

### Miscellaneous Construction

Fla., Miami Beach—Peninsular Terminal Co., Carl G. Fisher interests, which will inaugurate freight car ferry between rail terminals and island, let contract for \$100,000 development of Peninsula Terminal Island, formerly Fisher's Island; contract provides for freight car ferry transfer, bridges, pontoons and railway and terminal facilities.

La., New Orleans—Gulf, Mobile & Northern R. R. Co., L. P. O. Exley, Ch. Engr., Mobile, Ala., completed contract with Bd. of Port of New Orleans, John McKay, Gen. Mgr., New Orleans Court Bldg., for immediate start on fill necessary for terminal which will accommodate 4000 freight cars; Bd. of Commrs. will supply fill by excavating first two of five slips, costing \$1,000,000 each; each will be flanked on each side by a covered shed, and in rear by 5-story warehouse, have accommodations for 14 ships and will be 1500 ft. long.

La., New Orleans—Bd. of Commrs. of Port of New Orleans, John McKay, Gen. Mgr., New Orleans Court Bldg., plans reconstructing and enlarging Toulouse St., Dumaine St. and Governor Nicholls St. wharves in 1931 at cost of approx. \$1,000,000.

La., New Orleans—Orleans Levee Bd., John Klorer, Engr., Camp and Common St., preparing plans, bids to be asked in about 90 days for improving Orleans outfall canal levees, costing approx. \$380,000, including London Ave. outfall canal levees, \$500,000; new levee on west bank of Mississippi River, Delacroix to Beka, 7500 lin. ft., \$85,000; Dumaine St. levee, Bienville St. to Esplanade Ave., 4900 ft., \$195,000; 2000 lin. ft. lake-front sea wall, each side of Bayou St. John, \$328,000; extension of Lakeshore seawall into New Basin Canal and Bayou St. John as far as locks, and Orleans Canal and London Ave. Canal for 700 ft. back of end of sea wall, \$215,000.

Md., Baltimore—See Drainage, Dredging and Irrigation.

Mo., Kansas City—U. S. Engr. Office, Postal Telegraph Bldg., has low bid from W. A. Rose Construction Co., 908 W. 25th St., at \$390,379, for constructing 10,650 lin. ft. standard pile clump dikes and 9040 lin. ft. standard reventment, Missouri River, Jackass, Fishing River and Fire Creek Bends. 10-9

Mo., Kansas City—City, W. S. Murray, Dir. Public Works, completing plans for wharf, foot Main St. and for Liberty St. wharf; date of bids not decided.

Mo., Kansas City—War Dept., Patrick J. Hurley, Secretary, Washington, approved Woodswether tract adjacent to mouth of Kaw River as suitable site for municipal wharf; Matthew S. Murray, Dir. of Public Works, instructed by H. F. McElroy, City Mgr., to proceed at once with plans for new wharf and rehabilitation of Main St. wharf. 10-9

Mo., Kansas City—Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., will call for bids about Jan. 2 for 2,500,000-bu., \$1,000,000 grain elevator; E. M. Tucker, Archt., Missouri Pacific System, Ry. Exch. Bldg., St. Louis, architect for this construction; Continental Export Co., Merchants Exch. Bldg., St. Louis, Lessee. 11-6

Mo., St. Louis—U. S. Engr. Office, Customhouse, opens bids Dec. 3 for constructing 10,000 lin. ft. piling dikes, Missouri River, Bonhomme Bend.

Mo., St. Louis—U. S. Engr. Office, Customhouse, opens bids Nov. 26 for constructing 4000 lin. ft. piling dikes, Missouri River, Dozier and Centaur Bends

Mo., Weldon Spring—U. S. Engr. Office, Customhouse, St. Louis, opens bids Nov. 26 for constructing 9000 lin. ft. piling dikes, Missouri River.

S. C., Georgetown—U. S. Engr. Office, Charleston, opens bids Nov. 18 for wharf, U. S. Engr. depot.

Tenn., Knoxville—War Dept., Office of Chief of Engineers, John J. Kingman, Lieut. Col., Corps of Engrs., Washington, advises regarding allotment of \$34,760 for Tennessee River, work, consisting of constructing stone dikes at Looney, Knoxville, Bakers and Goose Neck Shoals to concentrate flow of river and insure navigable depths, will probably be carried out during present low water season by Government plant. (See Drainage, Dredging and Irrigation, 11-6.

Tex., Brady—City plans removing all water obstructions and constructing levee along south bank of Brady Creek.

Tex., Houston—See Railways.

Va., Cape Charles—Peninsular Ferry Corp., Cape Charles, let contract to W. L. Jones Construction Co., Elizabeth City, N. C., for terminal, and to Norfolk Dredging Co., Campestello Wharf, Norfolk, for dredging, total about \$100,000. 9-4

W. Va., White Sulphur Springs—Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond, Va., let contract to Walton Construction Co., Liberty Trust Bldg., Roanoke, Va., for White Sulphur tunnel.

### Miscellaneous Enterprises

Ala., Montgomery—Montgomery Linen Supply Co., incorporated; A. E. Massey, 7903 Zemple St., New Orleans.

Ark., Fort Smith—Chamber of Commerce, reported, approved plans for establishing meat packing plant, unit of Banfield Bros., 915 E. Apache St., Tulsa, Okla.; \$40,000 to be subscribed locally.

Florida—Southern Sugar Co., 919 N. Michigan Ave., Chicago, Ill., reported, let contract to Birmingham Boiler & Engineering Co., Inc., 815 N. 41st St., Birmingham, Ala., for 150 tons struc. steel shapes for sugar cane boxes.

Fla., Daytona Beach—Reversible Map & Chart Co., Inc., 933 Madison Ave., P. O. Box 1121, Geo. T. Robinson, Pres., will erect plant for manufacture double faced maps and charts mounted on spring rollers; temporary building about 30x40 ft.; wood and frame; comp. roof; 1 story. See Want Section—Machinery and Supplies—Miscellaneous.

Fla., Lake City—J. L. Gray planting 90 acres, first unit of 300 acres in tung trees.

Fla., Lakeland—John E. Ballenger Construction Co., capital \$50,000, incorporated; J. E. and R. N. Ballenger, C. M. Nolan.

Fla., South Jacksonville—Squeeze Easy, Inc., chartered; C. P. Mann, H. L. Sawyer; manufacture juice extractors.

Fla., West Palm Beach—Dri Gas Co., Inc., capital \$30,000, chartered; C. W. Gibbs, 523 Avon Road; gas stoves and supplies.

Ga., Atlanta—National Library Bindery Co., formerly 311 Spring St., will occupy building on Peachtree Rd., to be erected by Hugh Richardson, 160 Peachtree St., N. E.; 1 and 2 story; conc. and brick; 1-story shop building in rear; cost \$20,000; A. Ten Eyck Brown, Archt., Doty Forsyth Bldg.

Ga., Atlanta—F. E. Varner, Standard Bldg., reported, has contract for construction manufacturing building Houston St. N. E., for Scripto Mfg. Co., 144 Jackson St. N. E.; 3 story; 50x200 ft.; rein. conc. construction; brick and tile walls; compo roof; steel sash; conc. and tile floors.

Ga., Cedartown—Roy Emmet, Griffin News, reported, acquired Cedartown Standard.

Ky., Harlan—New System Bakery, incorporated; J. F. Duncan, J. B. Lambkin.

Ky., Irvine—Hamilton Carhartt Overall Co., 1605 Michigan Ave., Detroit, Mich., reported, plans establishing overall plant; \$200,000 subscribed locally.

La., Lake Charles—Calcasieu Shipping Co., Inc., chartered; Charles A. Bone, R. Wilbur Smith.

Ky., Louisville—Thomas D. Cline Amusement Enterprise, incorporated; Thomas D. Cline, Inter-Southern Bldg.

La., New Orleans—Inland Waterways Corp., 230 Magazine St., reported, may purchase new equipment for handling quantities of oil and petroleum products.

La., New Orleans—Profits Island Gravel Co., Inc., capital \$200,000, chartered; G. V. W. Lyman, Canal Bank Bldg.

Md., Baltimore—National Dairy Products Corp., 120 Broadway, New York, will close contract early in 1931 for control of Western Maryland Dairy Corp., 1125 Linden Ave. 11-6

Md., Baltimore—Vapor-Eze Chemical Co., Inc., 15 E. Lombard St., chartered; R. Edgar Trippett, Burneice F. Lovelace.

Md., Baltimore—Jersey Ice Cream Co., 1726 E. Pratt St., will have revised plans complete in about 2 weeks for milk plant, ice cream plant addition and garage; 2 story, brick, 100x185 ft.; McCormick & Co., Inc., Archts., 121 S. Negley St., Pittsburgh, Pa. 10-23

Md., Gaithersburg—Montgomery County Transportation Co., Inc., chartered; J. Edgar Johnson, Roland N. Walker.

Md., Highlandtown Sta., Baltimore—Crown Cork and Seal Co., Eastern Ave., Fleet and Kresson Sts., rebuild burned storage shed No. 50 and storage and grinding house No. 51.

Missouri—C. J. Heisenbichler, Cape Girardeau, has contract for 2 maintenance buildings for Missouri Highway Dept. in Southeast Missouri; Sikeston building will be 1 story, brick, 76x41 ft.; at Doniphan, building will be 61x41 ft.

Mo., Kansas City—Oak Park Laundry Co., incorporated; George M. Gaugh, Courtney Rd.

Mo., Kansas City—Robt. H. Smallfeldt, Pres., Kansas City Electrotype Co., 616 Wyandotte St., erect industrial building S. E. Cor. Seventh and Wyandotte Sts.; 2 story; cost \$40,000.

Mo., Kansas City—Renne Dairy Co., incorporated; Frank J. Renne, Jr., 4510 Prospect Ave.

Mo., St. Louis—Gillette Rubber Co., incorporated; Roland S. Baker, Kirkwood; Martin D. Hughes, 515 Tiffin Ave., Ferguson.

Mo., St. Louis—David Miller Candy Co., Inc., chartered; David Miller, 4952 Lotus St.

Mo., St. Louis—Regent Clothing Co., 5915 Easton Ave., chartered; Morris Greenberg.

Mo., St. Louis—Martin P. Rosenmeyer, Inc., 1907 Boatmens Bank Bldg., incorporated; Martin P. Rosenmeyer, 1548 S. Vandeventer Ave.; engineering and contracting.

Mo., St. Louis—Albert J. Bushmueller, 3444 Gravois St., plans improvements to cleaning plant.

Mo., Webster Groves, St. Louis—Tret-O-Lit Co., incorporated; Sears Lehmann, 239 W. Gate St.; manufacture chemicals.

N. C., Charlotte—Phillips Pants Co., capital \$100,000, incorporated; N. J. Phillips, 1710 S. Mint St.

N. C., Charlotte—National Beverage Products Corp., capital \$50,000, incorporated; F. A. Fischrupp, 217 N. Myers St.

N. C., Charlotte—American Cyanamid Co., Fifth Ave., New York, reported, negotiating for A. Klipstein & Co., 644 Greenwich St., New York, having branch at Charlotte; manufactures chemicals.

N. C., Lumberton—F. & W. Hardware Co., Inc., capital \$60,000, incorporated; D. P. Walters, M. H. French.

N. C., Salisbury—Carolina Rubber Hose Co., capital \$50,000, incorporated; Harry R. Ferguson, Miles J. Smith.

Okla., Oklahoma City—Fountain & Fixture Co., 629 W. Second St., reported, plans \$18,000 addition storage and distribution plant.

Okla., Tulsa—V. Ed Gabriel, 2202 E. Admiral Blvd., plans packing plant in Osage County; initial building 1 story; 40x70 ft.; cost \$25,000.

Okla., Tulsa—Electric Supply Co., 815 E. Third St., reported, low bidder for installation of 23 downtown traffic lights.

Tenn., Hohenwald—Middle Tennessee Products Corp., capital \$25,000, incorporated; Harry M. Rupe, T. E. Poore, W. L. Kittrell.

Tenn., Memphis—Parkview Hotel Apartment Co., capital \$200,000, incorporated; A. A. Hornsby, Bank of Commerce Bldg.

Tenn., Nashville—Tennessee Cereal Co., Temporary Office, 617 Independent Life Bldg., let contract to Wagar Construction Co., Norris Bldg., Atlanta, Ga., for construction of \$100,000 plant on Franklin Rd.; and auxiliary building for power plant and water filtration plant; machinery and equipment contract let to Allis-Chalmers Mfg. Co., Milwaukee, Wis.; water contract equipment to Permutit Co., 440 Fourth Ave., New York; boiler and working equipment arranged for; Hart & Stone, Archts., 602 Hitchcock Bldg., Nashville. 10-16

Texas—Ralph Candler, San Antonio, and New York, reported, interested in organizing company with \$7,000,000 capital to establish plant in Texas for manufacture of radio receiving sets and other radio products; San Antonio, Dallas, Fort Worth, Waco and Wichita Falls under consideration; Maurice J. Francill, Ch. Engr. and V. P. of company to be organized.

Tex., Cuero—Johnson Construction Co., Waco, reported, has contract for packing plant for Swift & Co., Union Stock Yards, Chicago, Ill. 9-4

Tex., Fort Worth—Fort Worth Amusement Co., capital \$200,000, incorporated; George T. Smith, 4227 El Campo St.

Tex., Pampa—Dodd's Hatchery & Produce, Inc., capital \$40,000, chartered; C. C. Dodd.

Va., Marion—W. F. Culbert & Sons, advises as soon as arrangements can be made expect to build asphalt mixing plant at Marion; Lynchburg plant to be built later; present plans are to buy asphalt plant complete from one manufacturer, rather than buy various units on bid basis for assembly by company. 11-6

Va., Norfolk—Enterprise Co., Inc., chartered; J. F. Gill, 821 Buckman Ave.; heating supplies.

Va., Richmond—Virginia Toy & Novelty Mfg. Co., capital \$65,000, incorporated; Marcellus Wright, American Natl. Bank Bldg.

Va., Richmond—L. H. Jenkins, Inc. (Book Mfrs.), W. Broad St., opens bids Nov. 12 at office of Charles M. Robinson, Archt., Times-Dispatch Bldg., for 3-story addition; 79x125 ft.; conc. and stucco and hollow tile.

### Motor Bus Lines and Terminals

Arkansas—Arkansas Railroad Comsn., Little Rock, reported, approved following permits for operating motor bus lines: Thompson Bus Lines, Wilson, to operate passenger service on Highway 40 from Osceola to Marked Tree, from Marked Tree to Newport over Highway No. 14; Sam Shockley, Lavaca, freight line Lavaca to Fort Smith; Ed Mitchell, Texarkana, operate passenger service Highway No. 71, from De Queen to Lockesburg, Highway No. 24, to Nashville, Highway No. 27, Nashville to Murfreesboro, No. 26 from Murfreesboro to Arkadelphia; George B. Sweetengren, Magazine, for freight service over Highway No. 10, Belleville to Danville and Ola; Ezra Hester, Fort Smith, freight line over Highway 271, Fort Smith to Arkansas-Oklahoma line and over Highway No. 8 to Mena.

Miss., Natchez—Natchez-Mississippi Bus Line, C. M. Morgan, Pres., 1701 Hardy St., Hattiesburg, filed application with Mississippi Railroad Comsn., Jackson, for operation of bus line from Natchez to Hattiesburg.

Tenn., Memphis—Smith Motor Coach Co., 144 N. Front St., reported, granted permission by Arkansas Railway Comsn., Little Rock, Ark., for operation motor bus Memphis to Little Rock.

### Railways

La., New Orleans—Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, Mo., will expend in conjunction with Louisiana & Arkansas Ry. Co., E. F. Salisbury, Ch. Engr., Minden, at least \$2,000,000 improving tracks of east bank system; entire route, New Orleans to Baton Rouge to be double tracked.

La., New Orleans—U. S. Engr. Office, First New Orleans Dist., opens bids Dec. 3 for constructing, maintaining and removing 2000 ft. detour track, installing bridge track and raising approach tracks on Texas and New Orleans R. R. Co.'s Bayou Sale Branch near North Bend.

Md., Baltimore—Baltimore & Ohio R. R., W. S. Galloway, Pur. Agt., ordered 1000 all-steel, 50-ton box cars from Standard Steel Car Co., Frick Bldg., Pittsburgh, Pa.

Mo., Kansas City—Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, construct 8 mi. service track for grain elevator.

Mo., St. Louis—Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., ordered from General Railway Signal Co., P. O. Box 1052, Rochester, N. Y., electric interlocking for Carroll St.; 57 working levers.

Texas—Atchison, Topeka & Santa Fe Ry. Co., M. J. Collins, Gen. Pur. Agt., Chicago, Ill., advises that company has inquiries out requesting bids on 1000 single sheathed box cars, 100,000 lb. capacity; 100 refrigerator cars, 100,000 lb. capacity; 400 refrigerator cars, 80,000 lb. capacity; 22 all-steel caboose cars.

Tex., Amarillo—North Plains & Santa Fe Ry. Co., Amarillo, capital \$500,000, chartered; J. R. Hitchcock, J. N. Freeman, Avery Turner, W. W. Kelly and others, all Amarillo; formed as subsidiary of Atchison, Topeka & Santa Fe Ry. Co., G. W. Harris, Ch. Engr., Chicago, Ill., to construct line, Amarillo northward via Dumas, Moore County and Starford, Sherman County, to north line of Dallam County, making total of 100½ mi. in Texas. 5-8

Tex., Heaton—Atchison, Topeka & Santa Fe Ry. Co., H. W. Rochester, Construction Engr., P. O. Box 2433, Amarillo, advises regarding construction on 8½ mi. of line running southeast from here, will involve making about 151,000 yd. of embankment and 53,000 yd. excavation, 2 mi. yard tracks and spurs to serve carbon black plants; track will be laid by William A. Smith Construction Co., 5600 Canal St., Houston; started construction; to be built under direction of G. W. Harris, Ch. Engr., Chicago, Ill., with W. H. Rochester as Const. Engr., and F. T. Tuley, Resident Engr.; Sharp & Fellows Contracting Co., Gen. Contr., Central Bldg., Los Angeles, Calif. 10-23

Te., Houston—Harris County Houston Ship Channel Navigation Dist. Comms., B. C. Allin, Sec., let contract to Lone Star Construction Co., P. O. Box 1891, for 7.76-mi. extension to Public Belt Ry. to serve north side of Ship Channel, at \$245,231. (See Miscellaneous Construction, 10-20.)

Tex., Spearman—Panhandle & Santa Fe Ry. Co., G. W. Harris, Ch. Engr., Chicago, Ill., authorized by Interstate Commerce Comsn., Washington, to construct 20 mi. new line, Spearman to connection with Amarillo line of Atchison, Topeka & Santa Fe Ry.

Va., Norfolk—Virginian Ry. Co., D. C. King, Pur. Agt., asking prices for rebuilding 500 hopper cars, 55-ton capacity.

### Railway Shops and Terminals

Ala., Birmingham—Louisville & Nashville R. R. Co., W. H. Courtenay, Ch. Engr., Louisville, Ky., let contract to Johnson Construction Co., 512 N. Sixth St., for yard office, service building and signal tower.

La., New Orleans—Public Belt R. R. plans installing yards to accommodate 1500 cars.

Tex., Toyah—Texas & Pacific Ry. Co., E. F. Mitchell, Ch. Engr., Dallas, plans extending water pipe line, Toyah to Pecos, 20 mi.; line completed, Toyah to Big Aguja Canyon in Davis Mountains. 5-22



## Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

## Proposed Construction

Fla., Miami Beach—City, Ed. R. Neff, City Engr., opens bids Nov. 19 for sidewalks, 27th St., and in Flamingo Park, 1565 sq. yd.

Florida—State Road Dept., R. W. Bentley, Chmn., Tallahassee, will let contracts in November for 11 mi. rebuilding State Road 5, Sulphur Springs to Pasco County line, \$300,000.

Fla., Jacksonville—Duval County will call for bids for paving Chaseville and Gilmore roads, 71,596 sq. yd., 18 ft. wide, \$32,218.

Ga., Macon—Bibb County Grand Jury recommended paving road, Forsyth road to Bellevue School.

Georgia—State Highway Bd., J. W. Barnett, Chmn., opens bids Nov. 25 for 11 roads and 3 bridges, aggregating \$1,624,000: Glynn-Brunswick Highway, \$550,000; Telfair County—20 mi. paving, Macon-Brunswick Highway, \$300,000; Mitchell County—10 mi. grading, Camilla-Newton Highway, \$65,000; Atkinson County—bridge approaches, Waycross-Tifton Highway, \$20,000; Burke County—12 mi. paving, Waynesboro-Augusta Highway, \$220,000; McDuffie County—6 mi. paving, Thomson-Augusta Highway, \$120,000; Putnam County—bridge approach, Athens-Macon Highway, \$80,000; Oglethorpe County—3 bridges, Athens-Augusta Highway, \$40,000; Paulding County—bridge approach, Atlanta-Cedartown Highway, \$60,000; DeKalb County—grading preparatory to paving, Avondale-Lithonia Highway, \$100,000; Madison County—bridge approaches, Bankhead Highway, Athens-Hartwell, \$20,000.

Kentucky—State Highway Comsn., H. D. Palmore, Engr., Frankfort, opens bids Dec. 9 for 2 roads: Green County—5.6 mi. grading, draining, Greensburg-Hardyville road, junction with Greensburg-Buffalo road approx. 2 mi. north of Greensburg and extending to junction with Bucknerville road at Ladies Chapel Church, S. P. 16 AG; Nicholas County—3.1 mi. grading, draining, Carlisle-Flemingsburg road, Myers Station to Fleming County line, S. P. 43 BG.

La., Lake Charles—City Comsn. and Missouri Pacific R. Co., E. A. Hadley, Ch. Engr., St. Louis, Mo., open bids Nov. 17 for 7683 sq. yd. 6-in. rein. conc. paving; F. Shotts & Sons, Engr., 921½ Ryan St.

Louisiana—State, Huey P. Long, Governor, reported, expend \$75,000,000 for paved roads and bridges. See Financial News Columns.

La., Alexandria—City plans starting paving Murray and Washington St. about Jan. 1; R. W. Bringham, Commr. of Streets and Parks.

Md., Baltimore—City, Wm. F. Broening, Mayor, expend \$2,000,000 for bridges and paving. See Financial News Columns.

Miss., Gulfport—City, Mayor and Bd. of Commrs., open bids Nov. 20 for resurfacing and repaving streets, 530 tons asphaltic material for cold application in place, 800 sq. yd. conc. base in place, 9400 sq. yd. conc. pavement; H. D. Shaw, City Engr.

Miss., Tunica—Tunica County Supvrs., L. C. Shannon, Clk., open bids Dec. 1 for 1 mi. graveling, Beat 3.

Miss., Vicksburg—City, Mayor and Aldermen calling for bids for paving several streets.

Miss., Vicksburg—City, S. S. Patterson, Clk., opens bids Nov. 17 for 8300 lin. ft. curb and gutter and 11,845 sq. yd. paving.

Mo., Clayton, St. Louis—St. Louis County, Roy Jablonsky, Highway Engr., opens bids Nov. 19 for improving Vance road.

Missouri—State Highway Comsn., T. H. Cutler, Engr., Jefferson City, has low bids for 4 roads and 13 bridges: Barry County—22.02 mi. grading, 18-ft. gravel, Highway 44, 175-ft. conc. bridge over Flat Creek, 75-ft. conc. bridge over branch of Flat Creek, 74-ft. bridge over dry branch, 360-ft. steel and conc. bridge over Flat Creek near Jenkins, Martin Wunderlich, St. Paul, Minn., \$221,632; Bates County—7.33 mi. grading, 16-ft. chat, supplementary highway A, Rich Hill to Hume, Nevada Construction Co., \$33,263; Lawrence County—12.08 mi. grading, 18-ft. chats, Highway 39, 30-ft. conc. bridge over Truitt Creek, J. M. Roark, Anderson, \$115,121; Jasper-Newton Counties—12.72 mi. 36-ft. graded earth, cut-off road, Fidelity Corner south of Carthage, 71AP through Diamond

to connect with new location Highway 16, 2 20-ft. conc. bridges over Fidelity Branch, 80-ft. conc. bridge and 20-ft. conc. bridge over dry branch, 420-ft. steel and conc. bridge over Shoal Creek, 165-ft. conc. viaduct over Frisco railroad and Shoal Creek, 40-ft. conc. bridge over dry branch, Kelly & Underwood, Granby, \$176,757; McDonald County—450-ft. steel and conc. bridge over Cowskin River, Pineville, Highway 88, F. H. Freeto, Pittsburg, Mo., \$35,384; Vernon County—5.37 mi. grading, 16-ft. chat, supplementary highway 8, Nevada Construction Co., \$17,425. 10-23

Missouri—State Highway Comsn., T. H. Cutler, Engr., Jefferson City, has low bids for 38 roads and 2 bridges:

In Andrew County—1.866 mi. 24-ft. graded earth, SA-2, W. K. Ferman Co., LaPlata, \$11,178; Caldwell County—4.028 mi. 26-ft. conc., 13-8, List & Weatherly Construction Co., Rwy. Exch. Bldg., Kansas City, \$35,610; Cape Girardeau County—3.048 mi. 12-ft. gravel, SA-1, Knox & Penzel, Jackson, Mo., \$28,019; Carter County—2.813 mi. 18-ft. gravel, 60-64B, Martin Wunderlich, St. Paul, Minn., \$72,167; Clinton County—2.367 mi. 14-ft. crushed stone, SA-2, C. W. Rose, Brookfield, \$8361; Dunklin County—1.120 mi. 18-ft. gravel, Ref. 16, Laahar Bros., Booneville, \$6280; Greene County—4.140 mi. 20-ft. conc., 66-17, J. A. Tobin Construction Co., 226 W. 39th St., Kansas City, \$83,235.

In Howard County—0.510 mi. 18-ft. conc. and 18-ft. gravel, 5-32, Geo. W. Condon Co., Omaha, Neb., \$30,889; 5.000 mi. 24-ft. graded earth, SC-2, Harry Tidd, Hutchinson, Kan., \$18,586; Howell County—0.534 mi. 16-ft. gravel, 80-9, Carte-Harlin Construction Co., West Plains, \$4400; Lawrence County—3.747 3.134, 2.577, 2.616 mi. 18-ft. chats, 39AP-16, 39AP-17, 39AP-18, 39AP-19, Martin Wunderlich, St. Paul, Minn., \$26,386, \$30,412, \$25,095, \$33,635; Linn County—4.215 mi. 16-ft. gravel SC-2, W. K. Ferman & Co., \$23,837; McDonald County—0.117 mi. bridge and 18-ft. gravel, 88-3, O. O. Fuller, Nevada, Mo., \$35,422; Monroe County—4.260, 4.603 mi. 24-ft. graded earth, 107AP-1, 107AP-2, Martin Wunderlich, \$13,535, \$142,003; Ralls County—4.797 mi. 18-ft. gravel, 19-61, Martin Wunderlich, \$47,957; Morgan County—2.338 mi. 18-ft. gravel, 5-58, Martin Wunderlich, \$47,894.

In Oregon County—1.640 mi. 18-ft. gravel, 63-107A, Martin Wunderlich, \$48,011; 3.887, 3.413 mi. 16-ft. gravel, 19-57, 19-58, Martin Wunderlich, \$25,461, \$21,143; Pemiscot County—4.964 mi. 18-ft. conc., 84-12, Forcum James Co., Dyersburg, Tenn., \$114,452; Phelps County—3.524, 5.000 mi. 12-ft. gravel, SH-1, ST-1, Birmingham & Jones, St. James, Mo., \$12,217, H. H. Ruddell, 759 Stanford St., Springfield, \$30,216, respectively; Platte County—0.351 mi. 18-ft. gravel, 45TR-5A, List & Weatherly Construction Co., \$39,663; 1.970 mi. 24-ft. graded earth, SZ-3, Pittsburgh-Des Moines Steel Co., Des Moines, Ia., \$27,757; Ray County—4.193 mi. 12-ft. chats, SA-2, E. W. Deering, St. Louis, \$14,426; St. Louis County—143.03 ft. overhead bridge, 66TR-5A, Geo. W. Condon Co., Omaha, Neb., \$11,692; Shannon County—4.692 mi. 16-ft. gravel, 19-36, H. H. Ruddell, Springfield, \$34,087; Webster County—1.088 mi. gravel haul, 66-24A, C. K. Kost, 518 Murphy St., Joplin, \$7564; Taney County—2.597, 2.418, 2.510, 2.516 mi. 16-ft. gravel, 78-5, 78-6, 78-7, 78-8, Martin Wunderlich, \$45,185, \$13,276, \$10,752, \$21,679. 10-23

North Carolina—State Highway Comsn., John D. Waldrop, Engr., Raleigh, has low bids for 3 roads. Guilford County—1.2 mi., County Home to Greensboro City limits, Murray Construction Co., North St., Greensboro, \$33,306; Northampton County—1.78 mi. hard surfacing, Route 48, Garysburg to Weldon bridge, Powell Construction Co., \$40,318; Watauga County—3.50 mi., Nello L. Teer Co., Geer Bldg., Durham, \$62,237.

N. C., Charlotte—City, R. W. Rigby, City Engr., has low bid from Tucker & Laxton, Ind. Bldg., at \$13,067 for underpass, S. College St. and extending street. 10-2

N. C., Durham—City will lay sidewalks on Broad St.

Oklahoma—State Highway Comsn., Ed. McDonald, Sec., Oklahoma City, has low bids for 2 roads and bridge: Love County—1.341 mi. grading, U. S. 77, F. A. P. 141-B, Scott, Lawson & Bybee, Yukon, \$15,171; Tulsa County—0.575 mi. 20-ft. 10-7-10 conc. paving, draining, U. S. 64 S. O. Maxey & Co., Durant, \$11,636. 10-23

Tex., Austin—City, Adam R. Johnson, Mgr., completing plans for 80-ft., 7-in. rein. conc. paving, Trinity St., \$7500; 36-ft., 6-in. rein. conc. paving, Chicon St., \$15,000.

Tex., Austin—City, Adam R. Johnson, Mgr., completing plans for paving 15th St., 50 and 46 ft. wide, 2-in. Warrenite bitulithic on 5-in. conc. base, \$6500; 5-in. conc. paving alleys between Third and Fourth St., 20 ft.

wide, \$1800; 6-in. rein. conc. paving, 36 ft. wide, Chicon St., \$15,000; 20-ft., 5-in. conc. paving, alleys between Fifth and Sixth St., \$2500; H. R. F. Helland, Consult. Engr.; L. M. Chokla, Paving Engr.

Tex., Austin—City, Adam R. Johnson, Mgr., completing plans for 36-ft., 6-in. rein. conc. paving, Comal St., \$17,000; 2-in. Warrenite bitulithic on 5-in. conc. base, 35-ft. driveways, parking between, East Ave., \$20,000; 20-ft., 5-in. conc. paving, alleys between 15th and 16th St., extending 136 ft. west from Guadalupe St., between 17th and 18th, between Eighth and Ninth, between Ninth and 10, between 10th and 11th and between Seventh and Eighth, \$4800; 5-in., 20-ft. conc. paving, between 12th and 13th, 13th and 14th, 14th and 15th, \$2600; 30-ft., 2-in. Warrenite bitulithic on 5-in. conc. base, W. 29th St., \$12,000; 6-in. rein. conc. paving, 28th St., \$17,000.

Tex., Austin—Travis County, Geo. S. Mathews, Judge, J. A. Belger, Auditor, opens bids Dec. 1 for 4.77 mi. graveling, Gregg-Manor road and 3.0 mi. Wells road.

Tex., Canton—Van Zandt County, S. L. West, Judge, completing plans for 7.348 mi. grading, draining, Highway 15, Smith County line to Grand Saline, F. A. P. 363-D, Unit 1, \$136,000.

Tex., Houston—Harris County, Norman Atkinson, Judge, has preliminary plans in progress for 8 mi. road work, Highway 73, Katy road, \$255,000; Highway Comsn., Austin, allotted \$50,000; A. J. Wise, Res. Engr., Courthouse.

Tex., Houston—Harris County, Norman Atkinson, Judge, A. J. Wise, County Engr., has \$140,000 state and Federal aid to match available county funds for 7.16 mi., Highway 19, Alameda road, \$372,000.

Tex., Palestine—Anderson County Commrs. plan 8½ mi. paving, Palestine to Tucker, early in 1931.

Tex., San Antonio—City, James Simpson, Clk., opens bids Nov. 17 for grading and 1-in. cold rock asphalt topping or 1-in. bitulithic topping, portion of Josephine St. and N. Almo St.; I. Ewig, City Engr.

Tex., San Marcos—City votes Dec. 9 on \$130,000 sewer bonds.

Texas—State Highway Comsn., Gibb Gilchrist, Engr., Austin, probably soon call for bids for 7.682 mi. grading, draining, 73, Campbell road to Addicks, S. A. P. 800-B, Unit 1, \$90,000.

Tex., Waco—McLennan County Commrs. plan letting contracts promptly for grading remaining 100 mi. of 400-mi. lateral road project.

## Contracts Awarded

Ala., Auburn—City let contract to Sullivan, Long & Haggerty, Bessemer, for paving at \$30,507; Robt. L. Totten, Consult. Engr., Birmingham.

Ala., Birmingham—City, Eunice Hewes, Clk., let contract to Hening & Bragan, 2211 Second Ave., North, for 450 sq. yd. conc. sidewalk paving.

Ala., Gadsden—City Council authorize Street Committee to employ Ed Cochran to patch holes in paving in city; Percy Todd, City Engr.

D. C., Washington—District Commrs. let contract to National Excavating & Constructing Co., at 32.9 cents per cu. yd. for 24,000 cu. yd. grading.

Ga., Blackshear—City, Hardy F. Keller, Mayor, let contract to Rutherford Construction Co., Macon Natl. Bank Bldg., Macon, at \$31,930, for conc. paving. 10-23

Kentucky—State Highway Comsn., H. D. Palmore, Engr., Frankfort, let contract to Ed. Hardy & Son, Pulaski, Tenn., at \$14,610 for 0.549 mi. rein. conc. bridge and approaches, grading, draining, surfacing, Franklin-Scottsville road, S. P. 52 A-S, Allen-Simpson Counties. 11-6

Louisiana—State Highway Comsn., O. K. Allen, Chmn., Baton Rouge, let contract to Robinson Construction Co., Centerville, Miss., at \$46,610, for 5 mi. grading, surfacing, between Waverly and Jackson, at \$46,610. 11-6

Louisiana—State Highway Comsn., O. K. Allen, Chmn., Baton Rouge, let contract to Lahaye & Fontenot, Ville Platte, at \$24,498, for 5 mi. grading, graveling, Route 220, Proj. 778-A, Evangeline Parish. 11-6

La., Sulphur—Town Council let contract to George Rilling, 1720 Madison St., for conc. sidewalks; T. H. Mandell, Engr., Chawanne Bldg., Lake Charles. 10-30

Miss., Vicksburg—City, S. S. Patterson, Clk., let contract to V. T. Zollinger, Shreveport, La., at 20 cents per sq. ft. for uniform conc. sidewalks, Adams St.

Miss., Walthall—Webster County Supvrs. and Road Comsn. let contract to Webster Construction Co., Europa, for final projects in \$350,000 road building program. 10-3



Mo., Joplin—City Comsn. let contract to V. E. Koch, 424½ Main St., at \$1.64 per sq. yd., for paving Murphy Ave.; to Charles DuBois, at \$1.50 per sq. yd., for graveling and grading alley between Roosevelt and McKinley Ave., at \$585.

Okla., Oklahoma City—City, E. M. Fry, Mgr., let contract to Western Paving Co., Petroleum Bldg., at \$124,298, for 8 mi. cold rock asphalt paving, W. 29th St., South, road.

Okla., Tulsa—City, Earl Logan, Auditor, let contract to Porter Construction Co., 12503 E. King St., at \$3102, for paving in Dist. 1060; to Standard Paving Co., 2119 E. 11th St., at \$73,543, for paving, Dist. 1060; H. A. Parker, City Engr.

Tex., Houston—Harris County Comms. Court let contract to Gulf Bitulithic Co., 2820 Polk St., for 12 mi. paving, South Houston-La Porte road, at \$380,472.

## Sewer Construction

**Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported**

Ala., Birmingham—Bd. of Revenue, Harry G. Culverson, has preliminary plans for constructing 5 mile trunk sewage line and disposal plant in Shades Valley; cost \$510,000; will soon let contract.

Ky., Louisville—Fry & Kain, 303 N. East St., Lansing, Mich., has contract at \$169,000 for sewers; Woolsey M. Caye, Tech. Engr., 400 M. E. Taylor Bldg. 10-16

La., New Orleans—James M. McGowan, Contr., 526 Carondelet St., received low bids for furnishing following material to be used in construction work for Sewerage and Water Bd.; American Brick Co., 4516 D'Hemecourt St., New Orleans, for furnishing five cars 8-in. terra cotta pipe; J. J. Clarke, 1601 Julia St., New Orleans, for 3 cars sewer brick; Service Foundry, Inc., 1153 S. Peters St., for castings, manholes, etc. 11-6

Md., Baltimore—Angeloizzi Construction Co., Everill and Mayberry Sts., has contract at \$19,326, for sanitary Contr. No. 266. 11-6

N. C., Greensboro—City, E. G. Sherrill, Clk., plans issuing \$25,000 sewage disposal bonds and \$25,000 water works extension bonds.

Okla., Kingfisher—Milliken & Whitneck Co., Const. Engrs., Southwestern Natl. Bldg., Oklahoma City, reported, receives bids Jan. 15 for sewage disposal plant; cost \$39,000. 10-9

Okla., Seminole—O. H. Holland, Seminole, reported, has contract for vit. sewer pipe for lateral sanitary sewer, Dist. E.

S. C., Greenville—Chamber of Commerce, Carl L. Gullick, interested in proposed sewerage of 8 combined sub-districts in Parker district territory.

Tex., Austin—City, Adam R. Johnson, Mgr., will expend \$100,000 for sanitary sewer improvements; work includes extension to sanitary sewers, 6, 8, and 10-in. pipe; work under direction of H. R. F. Helland, Const. Engr. 11-6

Tex., Dallas—City, John M. Young, City Engr., has plans complete for storm sewers, date of opening bids not set; work will consist of 10-ft. mono. conc. conduit at tunnel section of Dallas Branch, 14-ft. mono. conduit and tunnel sec. Mill Creek, 7-ft. mono. conc. conduit, Pacific Ave.; total cost \$970,000. 11-6

Tex., San Marcos—City votes Dec. 9 on \$130,000 bonds for purchase and installation sewer system.

Va., Orange—J. B. McCrary Co., Citizens & Southern Bldg., Atlanta, Ga., has contract for water and sewer system; J. N. Ambler of Ambler Engineering Co., 2221 Monument Ave., Richmond, Engrs. 10-16

## Telephone Systems

Alabama—Public Service Comsn., Montgomery, approved application of Lamar County Telephone Co., to acquire telephone properties of Boco Telephone Co., serving Kennedy and community and Millport Telephone Co., serving Millport.

Fla., St. Petersburg—Majestic Appliances, Inc., capital \$15,000, chartered; E. B. Askew, First Natl. Bank Bldg.

La., New Orleans—Station WSMB, National Broadcasting Co., Harold M. Wheelahan, Station Mgr., reported, acquired site, construct 1000-watt transmitter; erect 2 towers 200 ft. high.

Miss., Clarksdale—Herbert A. Morris applied to Federal Radio Comsn., Washington, for permission to erect 100 watt broadcasting station.

Mo., Kirkwood—KWK, Greater St. Louis Broadcasting Corp., 4965 Lindell Blvd., St. Louis, applied to Federal Radio Comsn., Washington, for permission to cover construction permit to move transmitter from St. Louis to Kirkwood and install new equipment.

N. C., Charlotte—Western Electric Co., Hawthorne, Ill., installing long distance equipment and switchboards, cost \$84,000, in plant of Southern Bell Telephone & Telegraph Co.

Okla., Tulsa—KGSF, Aeronautical Radio, Inc., applied to Federal Radio Comsn., Washington, for construction permit for radio-phone transmitter.

Tex., Alamo—Whalen Radio Service, Inc., chartered; W. D. Whalen, A. O. Clover.

Tex., Baytown—KJV, Radiomarine Corp. of America, granted application by Federal Radio Comsn., Washington, D. C., for construction permit.

W. Va., Charleston—Chesapeake & Potomac Telephone Co. of West Virginia, reported, plans pole replacement on Charleston-Kanawha Falls trunk lines, construction additional telephone circuits to Montgomery and Oak Hill, cost \$28,170; also authorized expenditure of \$57,000 for additional switchboard facilities at White Sulphur Springs, Fairmont, Wellsburg, cable extension at Grafton and an additional out-of-town line connecting Tesla central office of Buffalo Telephone Co. in Braxton county.

## Textile Mills

Clark Thread Co., Newark, N. J., reported, plans establishment of 40,000 spindle mill in the South; Georgia, Alabama and South Carolina under consideration.

Ga., Gainesville—The Lonsdale Co., Inc., Robt. H. Goddard, Pres., 50 S. Main St., Providence, R. I., reported, has plans by J. E. Serrine & Co., 215 S. Main St., Greenville, S. C., for cotton mill; brick, conc. struc. steel, built-up roof, cast stone; cost \$250,000; company advises have no such project in view at present time.

N. C., Hemp—Spencer Love, Burlington, reported, acquired silk mill; will increase capacity.

N. C., Winston-Salem—Hanes Knitting Mills, N. Main St., reported, let contract to H. and B. American Machinery Co., Pawtucket, R. I., for spinning frames equipped with 4 roll long draft system.

Tenn., Chattanooga—Minaret Mills, Inc., authorized capital \$25,000, chartered; W. C. Henderson, Pres. and Treas., Lookout Mountain; Lyle Stovall, V. P., and Clarence Kolwyck, Sec.; specializing in hosiery; have privilege of manufacturing, buying and selling textile by-products and accessories; offices are 244 E. Eleventh St. 10-30

Tex., Waxahachie—Waxahachie Cotton Mills, reported, install new equipment in dyeing department.

## Water Works

**Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification**

Ky., Louisville—Pitt Construction Co., Starr Bldg., Pittsburgh, Pa., has contract for replacement work on Crescent Hill filters for Louisville Water Co.; cost \$139,700. 10-16

Ky., Versailles—Chamber of Commerce, A. A. Bowmar, Chmn., Committee, interested in water supply system; pipe line to Kentucky River; Howard K. Bell, Engr.

Ky., Walton—Town voted \$25,000 water works bonds. See Want Section—Machinery and Supplies.

Ky., Louisville—Henry Vogt Mch. Co., 1000 W. Ormsby St., Louisville, has contract at \$38,301 for boilers, including soot blowers, super heaters and ash jobbers for Louisville Water Co., Inc., 435 S. Third St.; Babcock & Wilcox Co., Traction Bldg., Cincinnati, O., contract for chain grate stokers; water mains to be laid by company's forces. 10-16

La., Carenero—Village, Ropley A. Richards, Mayor, receives bids Nov. 17 for constructing and enlarging water distribution system. 9-11

Mo., Gilman City—City plans voting on \$60,000 water works bonds.

N. C., Greensboro—See Sewer Construction.

N. C., High Point—Guilford Construction Co., Greensboro, reported, low bidder for laying 15,000 ft. of pipe line and constructing 42 manholes on S. Main St. and in Oak Hill section. 10-30

N. C., Kings Mountain—See Electric Light and Power.

N. C., Lincolnton—City, R. H. Harrill, Clk., rejected bids on addition to filtration plant and water works improvements. 10-23

N. C., Morehead City—See Electric Light and Power Plants.

Okla., Britton—City, reported, plans lateral sewers; Peckham & Riggins, Engrs., 6036 W. Main St., Oklahoma City.

Okla., Holdenville—City, C. H. Edge, Engr., receives bids Nov. 26 for \$225,000 water works improvements: 4000 ft. of 16-in. c. i. pipe, impounding reservoir, capacity 3,000,000 gal.; install one 700 g.p.m. and one 1000 g.p.m. motor driven pump. 9-18

Okla., Hinton—Town, Harrison W. Miller, expects to prospect for water in greater quantities, may enlarge present plant; will probably purchase pump. 11-6

Okla., Mangum—City voted \$108,000 water works bonds; H. T. Lawrence, Engr. 10-2

Okla., Wetumka—City, reported, plans \$30,000 water works system; V. V. Long & Co., Engrs., Colcord Bldg., Oklahoma City.

Tenn., Lebanon—City applied to U. S. Dist. Engr.'s Office for permission to construct pumping station and intake on left bank of Cumberland River. 10-16

Tenn., Nashville—City, J. M. Bauman, Member, Bd. of Public Works, contemplates addition to filtration plant, no definite plans made. 11-6

Tex., Brownsville—Carrothers Construction Co., 6803 E. 39th St., Kansas City Mo., reported, has contract at \$129,175 for city filtration plant. 10-9

Tex., Brownwood—See Drainage, Dredging and Irrigation.

Tex., Fort Bliss, El Paso—Q. M. Corp. receives bids Nov. 23 for sinking sand proof deep well of envelope type, constructing pump house with steel derricks, and providing and installing pumping equipment and necessary pipe line.

Tex., Houston—City acquired 13 acres Lucille and Gregg Sts. as site for new water plant; will call for bids latter part of Nov. for drilling 2 wells; receives bids Nov. 19 for drilling water wells at Scott St. sub-pumping plant; J. A. Sauls, Engr.

Tex., Marble Falls—R. Goeth, Marble Falls, reported, acquired private owned water works plant; plans improvement.

Tex., San Antonio—City, W. D. Masterson, Gen. Mgr. Water Bd., let contract to Layne-Texas Co., Second Natl. Bank Bldg., Houston, for drilling 15-in. well at Market St. station; to Joe Rohmer, for 12-in. at Breckenridge Park station; Dingman Drilling Co., Alamo Bank Bldg., for drilling 12-in. at Mission pumping station; plans additional improvements.

Tex., Waco—City, Hubert Davis, Const. Engr., 1721 N. 12th St., soon call for bids for constructing breakwater near mouth of Bosque to protect Lake Waco pipe line from erosion.

Tex., Waxahachie—Prince Bros. Drilling Co., has contract at \$25,917, for water works improvements; will probably purchase pump in about 120 days after well is completed. 10-23

Va., Orange—See Sewer Construction.

## Woodworking Plants

Ga., Macon—Fairlyland Mfg. Co. incorporated; R. N. Edwards, Uvalde; establish plant, 1909 Vineville Ave., for manufacture toy furniture.

## FIRE DAMAGE

Ark., Alma—Dancing pavilion, lunch room, dressing rooms, etc., at Pine Springs Park, north of Alma, owned by J. T. Underwood.

Ark., Taylor—W. W. Sorrels' building occupied by C. D. Hughes' general store; loss \$12,000.

D. C., Washington—Schuyler & Lounsbury Antique Studio, 1409 Twentieth St., N. W.; loss \$50,000.

Ky., Rochester—Masonic Hall; J. Stewart's store and residence; Robert Elliott's garage; Hugh Willis' store and residence; loss \$25,000.

Ky., Barlow—M. H. Bagby's residence.

Fla., Jacksonville—First Methodist Church, Newman and Duval Sts., C. B. Peeler, Mutual Life Bldg., Chmn., Bd. of Trustees.

Ga., Columbus—L. P. Tuckers' residence, Beallwood Ave., Beallwood; unoccupied dwelling nearby.

Ga., Savannah—Thunderbolt Casino at recreation center operated by M. M. May, 1226 E. Henry St.

Ky., Danville—Central Wholesale Co.'s warehouse, Harding and Walnut Sts.; loss \$10,000.

Ky., Madisonville—Ray Hicks' residence, Etowah Rd., 4 miles from Madisonville.

Ky., Marion—Marion Flour Mills, owned by Maurice Dunn, Baxter, Mo.; loss \$40,000.

Ky., Smiths Grove—Frank and Richard Crump's barn, mile north of Smiths Grove; loss \$10,000.

La., Kolin—Public school; loss \$8000; W. J. Avery, Supt. of Schools, Rapides Parish, Alexandria.

La., Oak Grove—Old First National Bank, housing telephone exchange, etc.; loss \$35,000.

Md., Baltimore—Several buildings at old Beudel's Amusement Park at Middle river.

Md., Baltimore—Residence, 4109 Westchester Rd., Windsor Hills, of Jos. Wase, Court Square Bldg.

Md., Highlandtown Sta., Baltimore—Storage shed No. 50 and storage and grinding house No. 51 of Crown Cork and Seal Co., Eastern Ave., Fleet and Kresson Sts.; estimated loss \$300,000.

Md., Security—Two buildings of North American Cement Co., loss \$50,000.

Miss., Drew—R. T. Wade's residence, 4 miles from Drew; loss \$20,000.

Miss., Lauderdale—Will Brown's residence, 5 miles from Lauderdale.

Miss., Macon—Parsonage occupied by Rev. J. A. George.

Mo., Dexter—Dexter Feed & Creamery Co.'s building; gasoline station operated by P. A. McDougal; loss \$15,000.

Mo., Kansas City—20,000-gal. capacity storage tank of White Eagle Oil & Refining Co.

Mo., Kansas City—Mrs. M. S. Neal's residence, 4805 Greenway Drive, Eastwood Hills.

Mo., St. Louis—Anheuser-Busch, Inc.'s warehouse, Second and Dorcas Sts.; loss \$100,000.

N. C., Mountain Home—C. W. Wiecking's hotel; loss \$25,000.

S. C., Gaffney—Russell Apartment on College St., owned by H. J. Russell; loss \$15,000.

S. C., McCormick—Dorn's Ginnery, operated by M. G. Dorn.

N. C., Bonlee—Bonlee High School; loss \$10,000.

Tenn., Estill Springs—Goddard House; loss \$10,000; address The Proprietor.

Tenn., Nashville—Ridgeway Apartments, 115 Seventeenth Ave., South; loss \$30,000; address The Proprietor.

Tenn., Newport—City Milling Co.'s plant, owned by Charles Morrell; loss \$50,000.

Tex., Austin—Boatman Dairy Plant; loss \$8000.

Tex., Galveston—Otis Hotel, 2306 Q St., Mrs. A. M. Hickman, Mgr.; loss \$10,000.

Tex., Kyle—Building owned by Mrs. M. K. Hartson, Wichita Falls; buildings of Mrs. M. B. Wilson and B. Smith.

Tex., Memphis—Potts Gin at Lakeview; loss \$30,000.

Tex., Mexia—Rosemead Hotel; loss \$10,000.

Tex., Wortham—Peyton Brothers' dry goods store; loss \$25,000.

Tex., Vernon—Oklaunion Gin, owned by Vernon Cotton Oil Co.; loss \$10,000.

Va., Suffolk—Confectionery store of H. S. Smith on North Main St. and portion of Suffolk News-Herald; loss \$50,000.

Va., West Norfolk—Residences of Geo. Weatherly and G. L. Williams; bldg. owned by West Norfolk Land Co., all Washington St. near Third Ave.

Va., Winchester—Frederick County Bd. of Supvrs. and Winchester City Council selected G. R. Ragan, 202½ Second St., S. W., Roanoke, as architect for 2-story addition to jail; may also remodel present structure; addition probably \$28,000; rein. conc., tool-proof windows and doors; accommodate about 46.

## Dwellings

Ala., Birmingham—Albert Allison, 816 S. Eighth Court, erect brick veneer and half-timber residence, Bush Hills; 2 stories, 44x30 ft., slate roof, tile baths; Turner & Van Arman, Archts., Martin Bldg.

D. C., Washington—Herbert & Myers have permit for 3 brick dwellings, 5710-16 Nevada Ave., N. W.; 2 stories; \$16,000.

D. C., Washington—L. E. Harris, Investment Bldg., has permit for \$10,000 brick and tile residence, 5307 Nevada Ave.; 2 stories.

D. C., Washington—C. B. Wallace, 722 15th St., S. E., erect residence, 3717 Horner Place, S. E., after plans by Geo. T. Santmyers, Archt., 1416 I St., N. W.

D. C., Washington—La Salle Park Corp., erect dwelling, 1803 Varnum St., S. E., after plans by Marcus Hallett.

D. C., Washington—H. H. Carter, Investment Bldg., erect dwelling, 3906 Legation St., after plans by C. H. Norton, Archt.; also 2-story brick dwelling, 3817 Legation, \$6500.

D. C., Washington—Wm. P. Barnhart, Argonne Apts., erect residence, 2800 Brandywine St., N. W., after plans by C. H. Norton.

D. C., Washington—Jas. C. Nealon, 1000 I St., N. E., has permit for 2 brick and cement block dwellings, 315-17 Madison St., N. W.; 2 stories; \$14,000.

Fla., Miami Beach—Volk & Maass, Archts., Plaza Bldg., Palm Beach, drawing plans for dwelling.

Fla., Miami Beach—Russell Pancoast, Archt., Lincoln Rd., probably complete plans in few days for \$10,000 dwelling and garage, Di Lido Island; frame and conc. blocks; following contractors invited to estimate: Louis A. Wessell, 305 Twenty-third St.; Wm. S. Green Co., 1327 Twentieth St.; R. W. Edholm, Bastian Bldg., all Miami Beach; R. G. Witters Co., 1745 S. W. Sixth St.; Geo. W. Langford, McAllister Hotel Bldg., both Miami.

Ga., Atlanta—Clay E. Joseph, care Atlanta Constitution, erect brick veneer residence, Manor Ridge Rd., Haynes Manor; 1 story and basement, conc. foundations, 2 tile baths, 8 rooms, hot air heat; Augustus E. Constantine, Archt., Candler Bldg.; bids in.

Ga., Marietta—H. B. Allen erect brick veneer residence; 1 story, 6 rooms; Ye Planry, Inc., Archt., 1713½ Live Oak St., Dallas, Tex.; plans complete.

La., Opelousas—Allen DeZaucar receives bids Dec. 1 for \$10,000 brick veneer residence; 1½ stories; Herman J. Duncan, Archt., 120 Murray St., Alexandria.

Md., Baltimore—H. W. Woodward, Vice-Pres.-Gen. Mgr., Aetna Mortgage Co., 25 Light St., ready for bids in about 10 days for \$25,000 residence, Poplar Hill; stone, 2½ stories; E. H. Glidden, Jr., Archt., 18 E. Lexington.

N. C., Durham—Dr. W. D. Forbis erect brick residence; hardwood floors, tile roof; Nelson & Cooper, Archts., 126½ S. Salisbury St., Raleigh; Fidelity Construction Co., low bidder.

N. C., Durham—Dr. F. H. Sweet erect residence; Nelson & Cooper, Archts., 126½ S. Salisbury St., Raleigh; bids in.

N. C., Fayetteville—J. T. Crowley erect brick veneer residence; 1 story, 6 rooms; Ye Planry, Inc., Archt., 1713½ Live Oak St., Dallas, Tex.

Texas—State Bd. of Control, Austin, has low bid at \$9987 from Rube Sessions, Wells, for 25 dwellings, Alabama and Couchatta Indian Reservation, Polk County.

Tex., Austin—Miss Vita Harmon, 503 W. 31½ St., erect residence; brick veneer, rein. conc. foundation, 1 and 2 stories; Page Bros., Archts., Austin Natl. Bk. Bldg.; Geo. Feuerbacher, 900 Robertson St., low bidder.

Tex., Houston—F. S. Sheldon has permit for \$10,000 residence, 2209 Arbor St.; brick veneer, 10 rooms.

Tex., Houston—Benson-Hall Co., Post-Dispatch Bldg., erect \$13,000 dwelling, 2005 Bellmead St.; brick veneer, 10 rooms.

## Government and State

Ala., Fort McClellan, Anniston—Constructing Quartermaster, Fort McClellan, probably call for bids during Dec. for \$100,000 hospital; conc. tile and stucco, 2 stories and basement, 31 beds.

# BUILDING NEWS

## BUILDINGS PROPOSED

### Association and Fraternal

Tex., Jourdan—American Legion erect rock, conc., corrugated iron and frame clubhouse; 1 story, 150x47½ ft., steel sash; Will N. Noonan Co., Archt., Bldrs. Exch. Bldg., San Antonio.

### Bank and Office

Ga., Atlanta—United Corp., Candler Bldg., remodel and erect additions to fireproof bldg., Luckie, Forsyth and Broad Sts., for stores and offices; \$200,000; structure now 6 stories, 50x180 ft.; A. Ten Eyck Brown, Archt.; Robt. G. Lose, Engr., both Forsyth Bldg.

La., New Orleans—Federal Bank of Louisiana, Mississippi and Alabama, St. Charles Ave. and St. Joseph St., alter mezzanine; terrazzo and marble work, wood floors, fabric waterproofing, radiators, etc.; Favrot & Livaudais, Ltd., Archts., Hibernia Bk. Bldg.; bids in.

### Churches

Fla., Jacksonville—First M. E. Church, Newman and Duval Sts., C. B. Peeler, Mutual Bldg., Chmn., Bd. of Trustees, plans to repair fire damage, remodel bldg. and add balcony.

Ga., Columbus—Church of Christ, Scientist, opens bids Dec. 5 for \$10,000 bldg.; plans and specifications completed; brick and tile, 1 story and basement, 37x77 ft., conc. foundation, comp. or slate roof; T. Firth Lockwood, Archt., Murrah Bldg.

Md., Frostburg—Mt. Zion Baptist Church, W. D. Reese, member, 17 Beall St., raising funds for bldg., Broadway and Ormond St.

Tex., Nacogdoches—First Baptist Church has low bid at \$19,599 from H. D. Estes, Commerce, for bldg.; Shirley Simons, Archt.

Tex., Stamford—First Baptist Church plans \$15,000 Sunday school.

### City and County

Ga., Barnesville—Lamar County Bd. of Commrs. soon have plans completed for brick and stone trim courthouse and jail; 2 stories, conc. foundation, comp. roof; E. C. Wachen-dorff, Archt., 1010 Standard Bldg., Atlanta.

Md., Baltimore—City, Bureau of Bldgs., probably call for bids within week or 10 for central library bldg. for Enoch Pratt Free Library, Wm. J. Baker, Jr., Pres., Bd. of Trustees; plans complete; Classic type, buff limestone, 3 stories and basement, 150x292 ft., 3 book stack levels in basement, steel stacks to hold about 1,500,000 volumes; structure, with equipment, cost about \$2,400,000; Clyde N. & Nelson Friz, Archts., Lexington Bldg., Baltimore; Edw. L. Tilton and Alfred Morton Githens, Conslt. Archts., both 141 E. 45th St., New York; C. L. Reeder, Mech. Engr., 915 N. Charles St.; H. F. Doeleman, Struct. Engr., 510 N. Charles St., both Baltimore.

Mo., Eldon—City voted \$15,000 city hall bonds.

Mo., Jefferson City—Cole County defeated jail bonds.

Mo., Kansas City—City, H. F. McElroy, City Mgr., erect fire station, 20th and Vine Sts., to replace No. 11, Vine near 18th St.

N. C., Valdese—Town enlarge jail; Q. E. Herman, Archt., Hickory.

Tex., Corpus Christi—Nueces County Commrs. Court opens bids Dec. 10 for jail equipment for courthouse annex; probably open bids in Feb. for office equipment and courthouse furnishings; Dielmann & Levy, Archts.-Engrs., State Natl. Bank Bldg.; Geo. H. Belote Construction Co., Contr., City Natl. Bank Bldg., both Corpus Christi.

Va., Falls Church—Volunteer Fire Dept. accepted plans by John Kearney, Archt., 1417 K St., N. W., Washington, D. C., for \$25,000 fire engine house; brick, 2 stories, 44x96 ft.; auditorium to seat 358, with 16x32-ft. stage on second floor.



Ark., Stuttgart—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., selected site for \$95,000 brick and conc. post office. 7-31

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., received bids Nov. 13 for clearing site for \$6,900,000 Archives building; John Russell Pope, Archt., 542 Fifth Ave., New York. 4-24

La., Baton Rouge—Gov. Huey P. Long, Chmn., Bldg. Comn. of new Cate Capitol bldg., receives bids until Dec. 10 for \$5,000,000 capitol on old campus of Louisiana State Univ.; separate bids on elect. wiring, plumbing, ventilating, heating system, and elevators; conc. piles and rein. conc. mat. work foundation, 433 ft. high, 4,800,000 cu. ft. of space; marble, tile and terrazzo finish in main floor with bronze doors, trim and grilles; struct. steel frame, entire exterior limestone, granite approaches, brick and hollow tile walls, hollow tile partitions and floors; steel and bronze windows; marble, terrazzo, tile, wood, conc. and rubber comp. floors, marble wainscoting and orna. plaster, many bronze and iron doors; 3 general elevators, 2 private and 1 elevator in tower, vacuum steam heat, mech. ventilation, ice water system, elect. conduit system, concealed lighting, boilers for either gas or oil; steel water tank in tower; first 4 floors 340 ft. long, 150 ft. wide; next 2 floors smaller, then 70x70-ft. tower with mech. rooms, and 15-ft. lamp above; 17 floors for offices, with about 4000 sq. ft. of office space for each floor; plans from Weiss, Dreyfous & Seiferth, Archts., Maison Blanche Bldg., New Orleans; bonds voted. 10-9

Miss., Kosciusko—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids Dec. 8 for post office; drawings from office Supvg. Archt.

Mo., Kansas City—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opened bids Nov. 14 for rough excavation for \$4,500,000 post office; probably let constr. contract early in spring. 8-7

N. C., Fort Bragg—Constructing Quartermaster receives bids in triplicate until Dec. 10 for nurses' quarters, Fort Bragg; information on request. 9-4

S. C., Spartanburg—Following contractors estimating on \$350,000 post office, court house, etc., bids Nov. 25 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.: North-Eastern Construction Co., Nissen Bldg., Winston-Salem, N. C.; Fiske-Carter Construction Co., 121½ W. Main St., Spartanburg; English Construction Co., Washington; Jones Bros. & Co., Box 1454, Wilson, N. C.; John M. Geary Co., Box 1253, Asheville, N. C.; Fanning & Sweeney, Inc., Jefferson Bldg., Greensboro, N. C.; Fleisher Engineering & Construction Co., 410 N. Michigan Ave., Chicago, Ill.; Worsham Bros., Empire Bldg., Knoxville, Tenn.; Potter & Shackelford, Inc., Allen Bldg., Greenville, S. C.; Algernon Blair, First Natl. Bank Bldg., Montgomery, Ala.; Batson-Cook Co., West Point, Ga.; James I. Barnes, Logansport, Ind.; Yeager & Sons, Danville, Ill.; J. A. Jones Construction Co., Commercial Natl. Bk. Bldg., Charlotte, N. C.; structure rein. conc., struct. steel, brick and tile, stone trim, marble, granite, terrazzo and tile work, 3 stories and basement. 10-30

Tex., San Benito—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., selected site for Federal building, Sam Houston Ave. and Hix St.

Tex., Wichita Falls—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., selected site, Lamar St. near Tenth St., for Federal building. 8-7

Va., Hampton Roads, Norfolk—Navy Dept., Bureau of Yards and Docks, Washington, receiving bids, date not announced, for steel tank, pump house addition, pumps and equipment and piping, Naval Operating Base, fuel depot, Hampton Roads. 11-6

Va., Petersburg—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids Dec. 2 for extension and remodeling (except elevator) of post office, etc.; drawings from office Supvg. Archt.

### Hospitals, Sanitariums, Etc.

Na., New Orleans—Charity Hospital plans \$500,000 Miltenberger Convalescent Home.

Miss., Gulfport—United States Veterans Bureau, Arlington Bldg., Washington, D. C., rejected bids for \$80,000 sewage disposal plant, U. S. Veterans Hospital. 9-25

Miss., Gulfport—Following contractors estimating on additional bldgs., utilities and alterations, roads, walks and grading, U. S. Veterans Hospital, bldgs Nov. 25 by U. S. Veterans Bureau, Arlington Bldg., Washington, D. C.: Algernon Blair, First Natl. Bank Bldg.; Sanford Bros., Inc., 301 Washington Ave., both Montgomery, Ala.; J. P. Cullen & Sons, 100 S. Main St., Janesville, Wis.; Murch Bros. Construction Co., Ry. Exch.

Bldg., St. Louis, Mo.; J. V. & R. T. Burkes, Inc., Amer. Bk. Bldg.; O. M. Gwin Construction Co., 350 Fern St.; J. M. DeFraithe, Inc., 620 State St.; Caldwell Bros. & Bond Bros., 618 Howard Ave., all New Orleans, La.; Batson-Cook Co., Inc., West Point, Ga.; J. A. Jones Construction Co., Commercial Natl. Bank Bldg., Charlotte, N. C.; Ellington-Miller Co., 25 E. Jackson Blvd.; Henry B. Ryan Co., 500 N. Dearborn St., both Chicago, Ill.; Madsen Construction Co., 618 National Bldg.; Ring Construction Co., Wesley Temple Bldg., both Minneapolis, Minn.; Smallman Construction Co., 110 S. Fifth Ave., Birmingham, Ala.; Virginia Engineering Co., First Natl. Bk. Bldg., Newport News, Va.; Collins Bros. Contracting Co., Inc., 313 Callavet St., Biloxi, Miss.; Dye & Mullings, Columbia, Miss.; A. Ziegenfelder, N. & F. Hewes Bldg., Gulfport, Miss.; Grahn Construction Co., Red Rock Bldg., Atlanta, Ga.; V. L. Nicholson Co., 611 S. Central Ave., Worsham Bros., Empire Bldg., both Knoxville, Tenn.; Beckelheimer & Small; Oden & Glenn, Carter Bldg., both Hattiesburg, Miss.; H. B. Nelson Construction Co., Box 626, Columbus, Ga.; W. J. McGee & Son, Lamar Bldg., Jackson, Miss.; Kellogg & Anderson, Sedalia, Mo.; W. P. Thurston Co., Inc., 301 S. Fourth St., Richmond, Va.; S. & W. Construction Co., Shrine Bldg., both Memphis, Tenn. 10-30

Tenn., Memphis—United States Veterans Bureau, Arlington Bldg., Washington, D. C., L. H. Tripp, Ch. Constr. Div., receives bids in triplicate until Dec. 23 at Room 764, Arlington Bldg., for nurses' home and additions to main bldg. and laundry, including roads, walks, grading and drainage, U. S. Veterans Hospital; work includes excavating, rein. conc. constr., hollow tile, brick work, cut stone, marble work, floor and wall tile, iron work, steel sash, steel stairs with slate treads, linoleum, metal stall partitions slate metal and built-up roofing, roof ventilators, metal weatherstrips, screens, refrigeration and outside sewer, water, gas, steam and elect. distribution systems; separate bids for (a) general constr., including plumbing, heating, elect. work and refrigeration; (b) elect. elevators.

Tex., Waco—United States Veterans Bureau, Arlington Bldg., L. H. Tripp, Ch. Constr. Div., Washington, D. C., may soon call for bids for \$1,200,000 U. S. Veterans Hospital; administration bldg., 2 or 3 patients' bldgs., dining hall, kitchen, laundry, garage, storehouse, boiler house, recreation hall and quarters for 12 to 15 doctors, 50 nurses, aides and dietitians and 100 other attendants, residences for supt. and other officials; main bldg. H shape, 4 stories, brick; other bldgs. 2 stories; all fireproof; indoor swimming pool, sound motion equipment, indoor and outdoor baseball diamonds, basketball courts and library. 7-24

### Hotels and Apartments

D. C., Washington—E. M. Willis, 1405 K St., N. W., has permit for eight 2-story brick flats, 1610-24 Sherwood St., N. E.; \$64,000.

Fla., Miami Beach—John B. Reid & Co., Agents, 722 Fifth St., reported, planning erection of 100 to 120-room hotel Fifth St. and Meridian Ave.

Mo., Cape Girardeau—Girardot Investment Co., P. T. Bolz, Pres., 327 N. Mermec St., St. Louis, refurbish and redecorate Hotel Idan-Ha; Bruce Decker, Lessee, Dighton, Kans.

Okla., Norman—Aldridge Hotel Co., Wewoka, plans to start work in about five weeks on \$300,000, 6-story, 80-room hotel.

Tex., Alice—Dielmann & Levy, Archts., State Natl. Bank Bldg., Corpus Christi, preparing plans for 4-story, rein. conc. and brick, 60-room hotel.

Tex., Corpus Christi—Nueces Hotel Co. having plans prepared by Glenn C. Wilson, Milam Bldg., San Antonio, for remodeling first floor; coffee shop and kitchen, street entrance; fireproof construction.

Tex., Houston—Charles Miles, 5 Greenwood St., has permit for \$13,000, 4-apartment building, 1510 W. Main St.

Tex., Houston—A. Jong has permit for \$10,000, 4-apartment building, 1516 Colquitt St.

### Miscellaneous

La., New Orleans—City, reported, voted \$1,000,000 bonds for rehabilitation of 23 public markets within 2½ years; to be leased by New Orleans Municipal Markets, Inc., Andrew Fitzpatrick, Baronne Bldg. 3-21

La., Shreveport—Clarence W. King, Archt., Giddens-Lane Bldg., received low bid at \$8224 from Gilman McConnell, Ricou-Brewster Bldg., for Home for Aged Negroes for Federated Charities; frame, 10 bedrooms and 2 dormitories with 40-bed capacity.

Md., Baltimore—C. Wilbur Miller, Baltimore Trust Bldg., having plans prepared by office of Jos. Evans Sperry, Calvert Bldg., for stable and garage in Worthington Valley, Baltimore County.

Mo., St. Louis—Following contractors estimating on superstructure of \$5,000,000, 16-story, brick, steel and rein. conc. merchandise mart and terminal warehouse, Poplar, Spruce, 12th and 13th Sts., bids Nov. 24 by Terminal Railroad Assn., Henry Miller, Pres., Union Station: General—A. D. Gates Construction Co., Chemical Bldg.; Stone & Webster Engineering Co. (George Chamberlain), Star Bldg.; The Foundation Co. (J. Hercules), Wainwright Bldg.; Gamble Construction Co., 401 Olive St.; McCormack Combs Construction Co., 3617 Olive St.; Selden Breck Construction Co., Fullerton Bldg.; John Hill Construction Co., Syndicate Trust Bldg.; Dickie Construction Co., 634 S. Kinghighway; Murch Bros. Construction Co., Railway Exchange Bldg.; Boaz Kiel Construction Co., Ambassador Bldg.; Westlake Construction Co., Wainwright Bldg.; Fruin-Colnon Construction Co., Merchants Laclede Bldg.; Kellerman Contracting Co., Victoria Bldg.; J. S. Alberici, Boatmen's Bank Bldg.; Wm. MacDonald Construction Co., Synd. Trust Bldg.; James Black Construction Co., 3177 N. 11th St.; Humes-Deal Co., Arcade Bldg., all St. Louis; Lundoff-Bicknell Co., 100 N. La Salle St.; Wells Bros. Construction Co., Monadnock Block; United Engineers & Constructors, Conway Bldg.; Geo. A. Fuller & Co., 140 S. Dearborn St.; B. W. Construction Co., 720 Cass St.; Paschen Brothers, 33 N. La Salle St., all Chicago; Plumbing—Thomas Sheehan Plumbing Co., 2233 Olive St.; J. A. Lynch Plumbing Co., 1618 Chestnut St.; Ryffel & Ratz Plumbing Co., 1340 N. Kingshighway; Werner Hencke Plumbing Co., 2335 S. Grand Blvd.; Corrigan Plumbing Co., 2501 St. Louis Ave.; McBride Mechanical Equipment Co., 2639 Locust St.; J. Sheehan Plumbing Co., 1609 Olive St.; C. O. Smith Plumbing Co., 4026 Forest Park Blvd.; E. Moynihan & Son, 2007 Olive St.; Heating—American Power Piping Corp., Merchants Laclede Bldg.; Kupferle Hicks Heating Co., 117 Washington Ave.; Midwest Piping & Supply Co., 1450 N. Second St.; Bradley Heating Co., 3834 Olive St.; Hester Bradley Heating Co., 4200 Forest Park Blvd.; Eichler Heating Co., Ry. Exchange Bldg.; Sodemann Heat & Power Co., 2306 Morgan St.; St. Louis Engineering & Heating Co., 1417 Olive St.; McBride Mechanical Equipment Co., 2639 Locust St.; D. F. Edwards, 2340 Pine St.; Elliott & Barry Engineering Co., 4060 W. Pine Blvd.; Lahey Heating & Ventilating Co., 111 N. Third St.; Peters-Eichler Heating Co., 1516 Pine St.; O'Mara Heating Co., Victoria Bldg.; Elevators—Wm. A. Miller Machine & Elevator Co., 920 N. Main St.; Haughton Elevator & Machinery Co., 614 N. Jefferson Ave.; Otis Elevator Co., 23rd and Locust Sts.; Westinghouse Electric & Manufacturing Company, 411 N. Seventh Street; Klug Elevator Company, 712 N. 10th St.; Electric—E. A. Koenenman Electric Co., 1420 Pine St.; Edw. P. Allison Co., Dennison Loepker Electric Co., both 317 N. 11th St.; Rick Electric Co., 1622 Chestnut St.; F. E. Newberry Electric Co., Century Bldg.; E. O. Dorsch Electric Co., 1418 Pine St.; Mound City Electric Engineering Co., 222 S. 8th St.; Eclipse Electric Co., 1224 Pine St.; Sprinklers—Crowder Bros. Automatic Sprinkler Co., 2212 Washington St.; Globe Automatic Sprinkler Co., Pierce Bldg.; Grinnell Company, Inc., Central Industrial Bldg.; Rockwood Sprinkler Co., Ry. Exchange Bldg., all St. Louis; American Automatic Fire Protection Co., 2992 Dearborn St., Chicago; to be operated by St. Louis Mart, Lawrence H. Whiting, Pres. of Boulevard Bridge Bank, Chicago; Preston J. Bradshaw, Archt., 18 Locust St.; W. J. Knight & Co., Consol. Engrs., Wainwright Bldg., both St. Louis. 10-30

Mo., St. Louis—Jim Remley Markets, Inc., 6675 Delmar St., remodel building, Keinen and St. Louis Aves.; install retail market, warehouse and packing plant facilities; 16,000 sq. ft. floor space.

Va., Newport News—Mariners' Museum, W. Gatewood, Mgr., plans to develop 800 acres on James River, about 3 miles above Newport News, for mariners' museum buildings and park; will build lake to cover 160 acres; 600-ft. dam, 70 ft. wide, with granite facings and balustrades to carry 2 roadways 24 ft. wide and central raised walkway; dam to incorporate conc. wall resting on sheet piling as water seal and to be provided with conc. spillways; proposed park to be traversed roads and paths; also considering building experimental model basin to investigate ship problems; plans being prepared for initial museum building to house library and marine exhibits. 5-8

La., New Orleans—Gulf, Mobile & Northern R. R. Co. of Louisiana, Wm. O. Lewis,

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Whitney Bldg., erect 5-story warehouse in connection with \$3,000,000 freight terminal on Industrial Canal. 10-9

La., New Orleans—Illinois Central R. R., A. F. Bleas, Ch. Engr., Chicago, soon start work on Union Station on Claiborne Ave.; \$750,000, 3 stories, 200 ft. frontage; improve freight facilities; total cost reported at \$8,000,000, when new trackage arrangement and their elevation is taken into consideration; will also be used by Southern Pacific R. R., which will share the expense. 5-8

### Schools

Ala., University—University of Alabama, Shaler Houser, Treas., soon ready for bids for 1-story, 50x150 ft., brick, stone trim gymnasium addition; 30x70 ft. pool, steam heat, gypsum roof; Warren, Knight & Davis, Archts., Protective Life Bldg., Birmingham.

Fla., Dover—Dover School Dist., petitioned Hillsborough County School Bd., Tampa, to call election in district soon on \$45,000 bonds for school building; brick.

Ky., Louisville—University of Louisville, Dr. Raymond A. Kent, Pres., expend \$25,000 for remodeling buildings, equipping laboratories for elementary work in biology, chemistry and physics and for library at Municipal College for Negroes.

Ky., Paducah—Bd. of Regents, West Kentucky Industrial College, receives bids Nov. 17 for \$75,000, 2-story and basement, 210x164 ft., brick, steel and frame administration building, 14th St. and Atkins Ave.; asbestos shingle roof, wood floors; G. Tandy Smith, Jr., Archt., Guthrie Bldg. See Want Section—Building Material and Equipment. 8-21

La., Alexandria—Rapides Parish School Bd., W. J. Avery, Supt., erect auditorium and classrooms in Rigolette School Dist. No. 6; \$75,000 bonds voted; C. Scott Yeager, Archt., Commercial Bank & Trust Bldg.

La., Kolin—Rapides Parish School Bd., W. J. Avery, Supt., Alexandria, rebuild school noted burned at loss \$8000.

La., Monroe—Ouachita Parish School Bd., T. O. Brown, Supt., receives bids Nov. 17 for \$25,000, 1-story, brick and steel gymnasium at high school; 92x110 ft., brick, hardwood floors on conc. base; J. W. Smith & Associates, Archts., Ouachita Natl. Bank Bldg.; same architects preparing preliminary plans for proposed junior college building.

La., New Orleans—Orleans Parish School Bd. erect \$150,000 annex to Henry W. Allen Elementary School on Nashville Ave.; plans are being drawn for building for colored trades school to cost about \$400,000; plans are also underway for establishment of part-time vocational educational center on former site of Presbyterian Hospital, house administrative building for School Bd., probably Nicholls School and additional vocational educational facilities.

La., New Orleans—Dillard Memorial University, Edgar B. Stern, Pres., Bd. of Trustees, soon begin construction of \$250,000 Flint-Goodridge Hospital for negroes, unit of proposed \$2,000,000 educational plant on Rose Hill tract, Gentilly Road near London Ave. 7-3

La., New Orleans—Following contractors estimating on 3-story, brick and stucco, stone trim B. M. Palmer School, Clouet St. between Urquhart and Villers Sts., bids Dec. 2 by Orleans Parish School Bd., City Hall Annex: J. A. Petty & Son, Inc., Audubon Bldg.; H. Pratt Farnsworth, Canal Bank Bldg.; Lionel F. Favret, Louisiana Bldg.; Chas. Gilbert Construction Co., Canal Bank Bldg.; R. P. Farnsworth & Co. and Richard McCarthy Co., both Maritime Bldg.; Gervais F. Favrot, Balter Bldg.; J. V. & R. T. Burkes, Inc., American Bldg.; Geo. J. Glover Co., Inc., Whitney Bank Bldg.; O. M. Gwin Construction Co., 3503 Fern St.; Caldwell Bros. and H. W. Bond & Bro., both 816 Howard Ave.; Geary-Oakes Co., Queen and Crescent Bldg.; J. M. deFraithe, Inc., Canal Bank Bldg.; E. A. Christy, Supv. Archt. for School Bd. 11-6

Md., Annapolis—Anne Arundel County voted \$1,000,000 school bonds.

Md., Baltimore—Following additional contractors estimating on \$450,000 high school for colored, Eden and McEldey Sts., bids Nov. 19 by Public Improvement Comsn., H. J. Leimbach, Supv. Engr., City Hall; North-Eastern Construction Co., 6 W. Madison St.; Price Construction Co., Maryland Trust Bldg.; J. Henry Miller, 405 W. Franklin St.; M. A. Long, 10 W. Chase St., all Baltimore; Lee Paschall, American Natl. Bank Bldg., Richmond, Va.; McCloskey & Co., 1620 Thompson St., Philadelphia; Taylor & Fisher, Archts.; Herman F. Doeleman, Struc. Engr., both Baltimore Trust Bldg.; Henry Adams, Mech. Engr., Calvert Bldg. 11-6

Md., Elkridge—Howard County defeated bonds for high school; W. C. Phillips, Supt. of Education, Ellicott City. 11-6

Md., Baltimore—City, Wm. F. Broening,

Mayor, voted \$1,500,000 bonds for schools for handicapped children; H. J. Leimbach, Supv. Engr., Improvement Comsn. 5-29

Mo., Gainesville—Bd. of Education, J. C. Harlin, Pres., rejected bids for \$12,000 school and called for new bids Nov. 14 on revised plans. 10-30

Mo., Kansas City—Bd. of Education has plans by C. A. Smith, Finance Bldg., for \$500,000, rein. conc. and brick Junior High School, 64th St. and Agnes Ave.; also for \$150,000, 11-room addition to Border Star School, 6301 Nomell Road.

S. C., Charleston—Bd. of Visitors, of The Citadel, John P. Thomas, Chmn., received bids Nov. 14 for \$175,000, 5-story brick, tile and stucco administration building; central tower 75 ft. square with two wings 35x90 ft., 3 stories; tar and gravel roof, wood floors; plans by Lockwood, Greene Engineers, Inc., Montgomery St., Spartanburg. 9-11

S. C., Orangeburg—Bd. of School Trustees, Dist. No. 26, W. A. Livingston, Chmn., has low bid at \$59,229 from Lupo & Holcomb, Columbia, for 2-story and basement, brick, stone trim, 12-classroom and auditorium school on Ellis Ave.; wood floors, steam heat; J. R. Urquhart, Archt., Palmetto Bldg., Columbia. 10-16

Tex., Austin—Bd. of Regents, J. W. Calhoun, Comptroller, University of Texas, ready for bids about Jan. for \$900,000 library; brick, stone and rein. conc.; Herbert M. Greene, LaRoche & Dahl, Archts., Construction Industries Bldg., Dallas. 11-6

Tex., Dimmitt—Dimmitt Ind. School Dist. votes Nov. 15 on \$35,000 bonds for physical education unit at new high school.

Tex., Galveston—School Bd., John Neethe, Pres., has \$2,000,000 bonds available for expansion program.

Tex., Junction—Junction Ind. & Dist. School Bd., C. A. Schraub, Pres., soon ready for bids for \$70,000, 2-story, brick, rein. conc. and stone high school; cement and tile floors; Phelps & Dewees, Archts., Gunter Bldg.; W. E. Simpson Co., Engr., Milam Bldg., both San Antonio.

Tex., Persidio—Persidio Ind. School Dist. voted \$60,000 bonds for high school.

Tex., San Antonio—San Antonio Ind. Dist. School Bd., reported, plans issuing \$3,000,000 bonds.

Va., Bloxom—Bloxom School Dist. voted \$60,000 bonds.

W. Va., War—Big Creek Consolidated School Dist. (War, Berwind and coalwood Dists.) voted \$175,000 bonds for high school. 10-2

### Stores

D. C., Washington—E. Roumel erect store, 1904 Seventh St. N. W.; R. C. Archer, Jr., Archt., 1759 U. St. N. W.

Ga., Atlanta—Hugh Richardson, Jr., 160 Peachtree St. N. E., remodel Rialto Theater, Forsyth and Luckie Sts., for store space; A. Ten Eyck Brown, Archt., and A. Barilli, Jr., Asso. Archts., both Forsyth Bldg.; Mr. Brown also preparing plans for remodeling Metropolitan Theater for commercial purposes.

Ga., Atlanta—Rawson Estate, care A. A.

Meyer, Hurt Bldg., remodel building, 62 Whitehall St., S. W.

Ga., Marietta—Following will rebuild store buildings recently destroyed by fire at loss \$250,000: Joe Brown Estate; Glover Estate; Blair Estate; Dr. J. M. Malone; W. L. Richardson; rebuilding plans not yet announced.

La., Alexandria—C. A. Schnack Jewelry Co., 1024 Second St., receives bids Nov. 24 at office Herman J. Duncan, Archt., 120 Murray St., for \$25,000, 2-story and mezzanine, 30x107 ft., rein. conc., brick, stone trim store on Third St.

La., New Orleans—Robert S. Eddy, Jr., 2301 S. Carrollton St., receives bids Nov. 18 for additions and alterations to 2-story, 70x110 ft., brick, 3-store building, Oak and Dublin Sts.; Jones, Roessle & Olschner, Archts., Maison Blanche Bldg.

Md., Cockeysville—Henry A. Knott, Inc., 2107 N. Charles St., Baltimore, plans erecting two stores on York Road; 1-story, brick; probably erect others later.

Tenn., Memphis—Ellis-Jones Drug Co., 110 N. Court Ave., purchased 3-story and basement building, 294 Madison Ave.; remodel and equip.

Tex., Dallas—J. W. Shiffin, Texarkana, erect 2-story, 16x116 ft., steel and conc., fireproof store, Pacific Ave. and Ervay St.

Tex., Galveston—Donna May Inc., Mrs. M. R. May, 1716 23rd St., remodel building, 2118 E St., for store.

### Theatres

Okla., Enid—G. E. Blumenauer, Archt., Masonic Bldg., advises that plans are in preliminary stage and will not be ready for bids before July or August, 1931, for \$780,000 theater and commercial building. 10-9

Tex., San Antonio—Fox Film Corp., J. R. Grainger, V.-P.-Gen. Mgr., 850 Tenth Ave., New York, reported, plans erecting \$1,500,000 fireproof theater during 1931.

Va., Newport News—Paramount-Public Corp., care Wm. P. Engle, Sec., 1901 First Ave., Birmingham, Ala., receives bids Nov. 17 for \$200,000, 2-story and basement, 100x150 ft., rein. conc. and struc. steel theater seat 1250 people; McDonald & Co., Engrs., Southeastern Trust Bldg., Atlanta, Ga.; additional bidder: National Construction Co., Tower Bldg., Washington, D. C. 11-6

### Warehouses

D. C., Washington—Reliable Realty Corp. has permit for \$57,500, 3-story, brick and conc. warehouse, 19-21 M St., N. E.

Fla., Tampa—O'Berry & Hall Co., 701 Whiting St., erect 1-story, brick warehouse addition; 50x75 ft.; F. J. Kennard & Son, Archts., 303 Zack St.

N. C., Charlotte—Parcel Delivery Co., Guy A. Burns, Pres., rear 606 S. Tryon St., erect \$25,000 brick building, S. Caldwell and E. Third St.

Tenn., Knoxville—Paul H. Davis, Dale Ave., and Marcus A. Parker, Maplehurst Park, remodel warehouse; \$15,000, 1-story, 300x150 ft., frame walls, rein. conc. floor slab construction; J. M. Dunn & Son, low bidders, 245 Broadway.

## BUILDING CONTRACTS AWARDED

### Bank and Office

La., New Orleans—Standard Oil Company of Louisiana, St. Charles and Jackson Aves., C. A. Scholder, Vice-Pres., erect \$150,000 annex; 6 stories, pressed conc. blocks and brick, site 50x120 ft., pile and rein. conc. foundation, struct. steel and iron work, comp. roof, steel sash, elevator; plans by Constr. Dept., R. A. Piddle, Ch. Engr., W. Horace Williams Co., Contr., Southern Bldg.

Okla., Oklahoma City—Starrett Investing Corp., 101 Park Ave., New York, start work soon after Dec. 1 for 33-story Ramsey Tower, First and Robinson Sts.; steel frame, stone base, face brick and stone above, site 100x125 ft.; 3 top floors for Skyline Club; Walter W. Ahlschlager, Archt., Inc., Archt., 10 N. Clark St., Chicago, Ill., and 565 Fifth Ave., New York; Drury & Morely Co., Asso. Archts., Perrine Bldg., Oklahoma City; Starrett Bros., Inc., Contrs., 8 S. Dearborn St., Chicago, and 101 Park Ave., New York. 10-9

### Churches

D. C., Washington—Metropolitan Memorial M. E. Church, 230 John Marshall Place, N. W., has permit for \$270,000 bldg., Nebraska and New Mexico Aves.; stone and hollow brick, steel frame, conc., 1 story, balcony and basement, 22 rooms, 74x135 ft., 73 ft.

high, gypsum roof; T. M. Sundt, Archt. in charge, care Sundt & Wenner, 1701 Arch St.; Walter H. Thomas, Const. Archt., 220 S. 16th St.; Stofflet & Tillotson, Contrs., Engrs., Wesley Bldg., all Philadelphia, Pa. 10-23

Ga., Chickamauga—First Baptist Church, Rev. Carl McGinnis, Pastor, let contract to R. M. Stansbury for 6 additional rooms.

Okla., Oklahoma City—Following sub-contracts let on \$105,000 Sunday school for First Baptist Church: Millwork, Tibbs-Dorsey Manufacturing Co., 911 S. Walker St.; common brick, Acme Brick Co.; face brick, Lusco Brick & Stone Co., Comm. Exch. Bldg.; stone, Harter Marblecrete Stone Co., 1614 W. Main St.; steel, Midwest Steel Co., 1539 W. Grand St.; wiring, Southwest Electric Co., 425 W. Main St.; heating and plumbing, A. F. Binns Co., 815 W. Grand St.; roofing, Swanda Bros., 510 W. Second St.; W. T. Vahlberg, Archt., Braniff Bldg.; Campbell & Price, Contrs., 605½ W. Main St. 10-39

### City and County

La., Monroe—City erect 2-story addition to city hall for fire station, West Monroe; W. N. Morris, Contr., 1801 Trenton St., West Monroe.



N. C., Taylorsville—Alexander County Bd. of Commrs. let contract to Campbell Lumber Co., Taylorsville, for \$18,000 jail addition; Q. E. Herman, Archt., Hickory.

Okla., Muskogee—Following sub-contracts let for \$250,000 city hall: Steel and iron, Muskogee Iron Works, Frankfort and Spaulding Sts.; lumber, Hope Lumber Co., 111 E. Okmulgee St.; elect. wiring and fixtures, J. H. Shouse, 428 N. 12th St.; plumbing and heating, Duff Plumbing & Heating Co.; brick, Standard Brick Co., Manhattan Bldg., all Muskogee; stone, Consolidated Cut Stone Co., 1233 E. Fifth St.; metal doors and windows, Ray Trimble Co., Philcade Bldg., both Tulsa, Okla.; millwork, American Sash & Door Co., 16th and Bellefontaine Sts., Kansas City, Mo.; Layton, Hicks & Forsyth, Archts., Braniff Bldg., Oklahoma City; L. L. Howenstine, Manhattan Bldg., and H. H. Nieman, Barnes Bldg., Asso. Archts.; Manhattan Construction Co., Contr., Manhattan Bldg., all Muskogee; rein. conc. frame completed, erecting steel columns and trusses over auditorium; stone and brick work start Nov. 10.

8-21

Tex., Beaumont—Additional material and sub-contracts let on \$1,000,000 Jefferson County courthouse: Cement, lime, plaster, and gravel, Beaumont Building Material Co., 1600 Pine St.; rein. steel, Contractors Steel Co., Long and Gulf Sts.; millwork, Gulf Manufacturing & Lumber Co., 1600 North St., all Beaumont; architectural terra cotta, Northwestern Terra Cotta Co., Denver, Colo., through Beaumont Building Material Co., Beaumont; metal forms, Earl E. Jones, 1901 W. Alabama St.; tile and terrazzo, International Tile Co., 1440 McKinney St.; kalamain and tin clad doors, bucks and trim, Coastal Sales Agency, 3914 Main St., all Houston, Tex.; metal casement windows, Campbell Casement Window Corp., Kalamazoo, Mich.; pile driving, A. M. Murtesbaugh, Inc., Roman Bldg., Lake Charles, La.; Fred A. Stone, Goodhue Bldg., and A. Babin, Perlstein Bldg., architects; McDaniel Bros., Contrs., Kyle Bldg., all Beaumont.

10-30

Tex., San Antonio—Ed Freidrich, 1117 E. Commerce St., has contract at \$17,382 for refrigerating counters for municipal market house.

10-16

### Dwellings

Ark., El Dorado—Lombard & Ludwig, Inc., 309 14th St., N. W., Washington, D. C., has contract for models for \$425,000 post office and court house; W. B. Smith, Contr., El Dorado.

10-30

D. C., Washington—Standard Construction Co. has permit for 2 conc. and frame dwellings, 3601-03 Fourteenth St., N. E.; 2 stories; \$10,000.

D. C., Washington—Jacobson Bros., 1616 K St., N. W., have permit for 2 brick and frame dwellings, 5327-31 Nebraska Ave.; 2 stories; \$18,000.

D. C., Washington—Wm. Montgomery, Pres., Acacia Mutual Life Assn., 101 Indiana Ave., N. W., erect \$50,000 residence, 6300 Nebraska Ave., N. W.; rubble stone, 2½ stories, 128x41 ft., 90 ft. high; Porter & Lockie, Archts., Architects Bldg.; Bradbury & Mohler, Contrs., Chandler Bldg.

Fla., Frostproof—F. C. Thompson plans 2 additional 5-room bungalows.

Ga., Atlanta—Mrs. Mary A. Greer, 360 Kendrick Ave., S. E., erect brick veneer residence; 902 Underwood Ave., S. E.; comp. roof, conc. foundation, hot air heat; owner builds.

Ga., Atlanta—Paul B. Cafaler, 868 Rock Springs Rfr., N. E., erect brick veneer residence, 1022 Reeder Circle, N. E.; 1 story, 6 rooms, comp. roof hot air heat; G. R. Bond Contr., Atlanta Natl. Bank Bldg.

Ga., Manchester—J. S. Peters let contract to Daniel Lumber Co., LaGrange, for brick veneer residence; 2 stories and basement, 10 rooms, hardwood and tile floors, slate roof; Smith & Biggers, Archts., Murrah Bldg., Columbus.

10-2

La., Donaldsonville—Chas. Louviere, Contr., 510 S. Hennessy St., New Orleans, erect brick veneer dwelling.

Louisiana—Oliver S. Livaudais, American Bank Bldg., erect 2-story Colonial residence, St. Bernard Parish; Paul G. Charbonnet, Contr., 830 Union St., both New Orleans, receiving sub-bids on slate roofing, oak, pine and tile floors, weatherboarding, steam heating system.

La., Baton Rouge—E. S. Starnes, 819 Convention St., let contract at \$9785 to W. H. Pyland for residence; brick, 2 stories and basement, 32x57 ft., slate roof; Lewis S. Grosz, Archt., New Raymond Bldg.

9-25

La., Baton Rouge—St. Agnes R. C. Church, East Boulevard, Rev. Edw. Rombouts, Pastor, 929 St. Maximilian St., started work on

\$13,500 rectory; Lewis A. Grosz, Archt., Raymond Bldg.; Clifford H. King, Contr., Prescott Lane.

Md., Baltimore—Parker & Shoop, Contrs., Meth. Protestant Bldg., erect \$15,000 dwelling, Forest Park; stucco and frame, 2 stories, 30x36 ft.

Md., Baltimore—John Welsh, Bldr., 11 E. Fayette St., erect 8 brick dwellings and garages, 2500-14 Forest Park Ave.; 2 stories; \$20,000; Geo. Wessel, Archt., 601 W. 40th St.

Md., Baltimore—Harry E. Page, Bldr., 327 E. 30th St., soon ready for sub-bids for \$15,000 dwelling, Broxton Rd., Homeland; stone, 2½ stories; Wrenn, Lewis, Westenhaber & Jencks, Archts., Title Bldg.

Md., Baltimore—Albert D. Alban, Bldr., 5704 Harford Rd., erect 2 or 3 dwellings, Alban Ave.; brick, 2 stories, about 25x30 ft., \$7500 each.

Md., Parkville, Baltimore—Parker & Shoop, Contrs., Methodist Protestant Bldg., Baltimore, erect \$10,000 dwelling, Summit Park; frame, 2 stories, 25x30 ft.

Md., Towson, Baltimore—Stebbins-Anderson, York Rd., Towson, erect 2-story brick dwelling, York Rd.; W. H. Emory, Jr., Archt., Balto. Tr. Bldg.; C. L. Kern, Contr., 612 McCabe Ave.

Mo., St. Louis—Paul Hale, 2121 Maury St., erect \$10,000 residence, 3759 Childress St.; brick, 2 stories, 35x30 ft., slate roof, hot air heat; A. Dougherty, Contr., 1320 Chawmut St.

N. C., Albemarle—Milton Brown erect English type brick residence, Pee Dee Ave.; 1 story, 7 rooms; B. C. Cranford, Contr.

Okla., Bethany—J. Walter Hall erect \$10,000 residence; brick and tile, 1½ stories and basement; day labor.

Okla., Tulsa—D. Goodall, 420 S. Olympia St., erect \$11,000 residence and garage; brick veneer, 1 story and basement, 28x26 ft.; owner started work.

Tex., Luling—E. B. McKean erect tile and stucco residence; 2 stories, 2 baths, 8 rooms; Herff & Jones, Archts., San Antonio Loan & Tr. Bldg., San Antonio; Davidson Construction Co., Contr., Milam Bldg., San Antonio, and Luling.

### Government and State

Ky., Louisville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., let contract at \$68,305 to Henry Bickel Co., 435 Garden St., Louisville, for foundation for \$2,000,000 post office, custom house and court house.

10-23

Tex., Randolph Field—Signal Officer, Lt. S. J. Keane, Randolph Field, let contract at \$16,700 to Dozier Construction Co., Littlefield Bldg., Austin, for underground telephone conduit system, Randolph Field.

10-30

Tex., Randolph Field—Following sub-contractors let on 2 cadet barracks, cadet mess hall and recreational bldg., and hospital, total about \$650,000, for which S. & W. Construction Co., Shrine Bldg., Memphis, Tenn.; Struct. steel and iron, Decatur Iron & Steel Co., Decatur, Ala.; brick and hollow tile, Carter B. Lyon, Columbian Mutual Tower, Memphis, Tenn.; millwork, Enochs Lumber & Manufacturing Co., S. State St., Jackson, Miss.; glass and glazing, John A. Williamson Co., 804 Ave. A.; finished hardware, Peden Co., 401 S. Flores St.; wiring, Martin Wright Electric Co., 1001 Navarro St., and Travis Electric Co., Medical Arts Bldg., all San Antonio, Tex.; steel sash and screens, Detroit Steel Products Co., 2252 E. Grand Blvd., Detroit, Mich.; steel toilet partitions, Henry Wels Manufacturing Co., Elkhart, Ind.; laundry chute, Metal Vitrix Co., 35 S. Dearborn St.; steel door bucks, Kalman Steel Co., Wrigley Bldg., both Chicago, Ill.; plumbing and heating, Wallace Plumbing & Heating Co., 2224 Summer St., Dallas, Tex.; rein. steel, Southern States Steel Corp., 503 S. Haskell St., Dallas, Tex.

9-25

### Hospitals, Sanitariums, Etc.

Ky., Lexington—United States Veterans Bureau, Arlington Bldg., Washington, D. C., let contract to W. T. Congleton Co., Walton Ave. and Third St., for \$30,000 storehouse, U. S. Veterans Hospital.

10-30

Md., Towson, Baltimore—Hughes Engineering & Construction Co., 10 E. 21st St., has heating contract for \$170,000 nurses' home, Sheppard & Enoch Pratt Hospital; plumbing, Jos. J. McGuire, 14 W. Clay St.; elect. work, Bonnett Electric Co., 217 N. Calvert St.; Wyatt & Nolting, Archts., Keyser Bldg.; M. A. Long Co., Contr., 10 W. Chase St., all Baltimore.

11-6

Mo., Excelsior Springs—United States Veterans Bureau, Arlington Bldg., Washington, D. C., let contract at \$58,000 to Mroley Construction Co., 1643 Bellevue Ave., Kansas City, Mo., for officers' duplex quarters, Bldgs. Nos. 23 and 24, U. S. Veterans Hospi-

tal; hollow tile, brick work, floor tile, slate and metal roofing, metal lathing, stucco, metal weatherstrips, screens; outside sewer, water, steam and gas distribution systems and elect. service connection.

10-2

Va., Richmond—St. Phillips Hospital let contract for \$127,000 nurses' home to Davis Bros., 1716 Summit Ave.; plumbing, \$9490, to S. H. Guza, 13 W. Cary St.; 5 stories and basement, elevators; laboratory; auditorium to seat 100; Baskerville & Lambert, Archts., Central Natl. Bk. Bldg.

11-6

### Hotels and Apartments

D. C., Washington—Franklin Apartment Co., 1530 Rhode Island Ave., N. E., erect \$200,000, 5-story, brick and conc., 51-apartment building, 1511 Franklin St., N. E.; R. P. Whitty Co., Inc., Bldrs., Denrike Bldg.; David L. Stern, Archt., 1412 I St., N. W.

Fla., Miami—Fred P. Roberts, Congress Bldg., erect 3-story, rein. conc., conc. block and stucco 12-apartment, Pennsylvania Ave. between 9th and 10th Sts.; Frederick Kloeffer, Archt., Exchange Bldg.; employ supt. and build by day labor; ready for sub-bids, including roofing, plumbing, electrical work, mason work, millwork, tile, plastering, painting, waterproofing and caulking, flooring, hardware, rough lumber.

Ga., Atlanta—J. G. Ham, 576 Park Ave., S. E., started work on \$35,000, 2-story and basement, brick veneer, 12-apartment building on Highland Ave. near Virginia Ave., N. E.; comp. roof, hardwood and tile floors, steam heat; owner builds by day labor.

Ga., Atlanta—Cliff Williams, 934 Glenwood Ave., S. E., started excavation for 2-story and basement, brick veneer apartment, 2231 Peachtree Road, N. E.; comp. roof, hardwood an tile floors, steam heat; 18 units; owner builds by day labor.

Md., Baltimore—Thomas Mullan, 3945 Greenmount Ave., plans to start work in few days on 11-story, brick, 127-apartment house, 39th St. and Canterbury Road; \$1,000,000, including site and equipment; Tudor style; underground garage to have two floors and accommodate 140 automobiles; Louis T. Rouleau, Archt., Investment Bldg., Washington, D. C.; owner builds.

10-9

Mo., Joplin—Manhattan Construction Co., Contr., Manhattan Bldg., Muskogee, Okla., reported, ready to finance erection of \$750,000, 12-story hotel and medical arts building; project was proposed year ago by Joplin Medical Arts Hotel Building Co., but temporarily dropped; A. C. Wiser, Archt., R. A. Long Bldg., Kansas City, Mo.

9-26-29

Okla., Oklahoma City—C. E. Stout, Perrine Bldg., started work on \$15,000, 2-story, 31x40 ft. brick veneer apartment, 100 W. 32nd St.

Okla., Tulsa—Mrs. Laura E. Bell, 563 N. Denver St., erect \$35,000, 3-story and basement, 40x105 ft., brick and hollow tile apartment; John V. Starr, Archt.; 512 S. Victor St.; R. E. Mangrum Construction Co., Contr., 211 S. Wheeling St.

Tex., Dallas—Mrs. A. J. Seeman, 4234 Scurry St., started work on \$40,000, 2-story, fireproof, 3-apartment, 4609 Sycamore St.; electric refrigeration.

### Miscellaneous

Fla., Lake Wales—E. Barnett, 338 Tilman St., let contract to Albion & Co., Bartow, for \$10,000, 1-story and basement, 38x30 ft., brick building for restaurant and service station; tile roof, conc. floors.

Okla., Oklahoma City—Holmes Home of Redeeming Love, Route 3, has plans by Layton, Hicks & Forsythe, Braniff Bldg., for hospital; 2 stories, brick, stone and rein. conc.; owner builds with superintendent on charge.

Tenn., Maryville—Mrs. A. K. Harper let contract to George Hammonree for \$15,000, 1-story, 51x43 ft., brick, marble trim Harper Memorial Library.

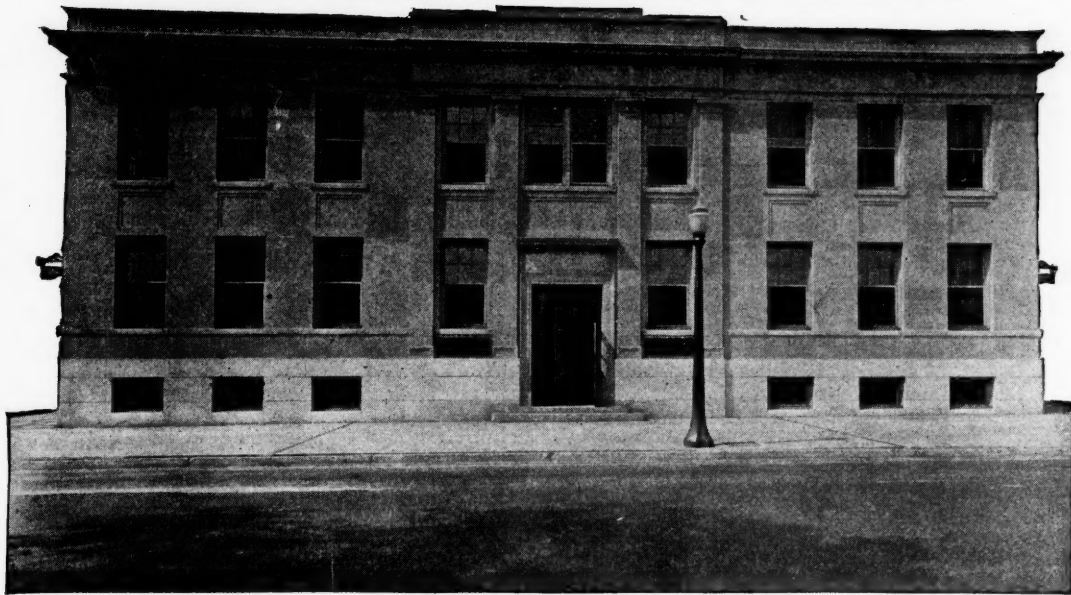
10-2

Tex., San Antonio—Miss Ora Johnson, Camp Waldemar, erect 2-story, stone and rustic cedar building for 3 dining rooms, kitchen, hospital clinic, etc.; owner builds; ready for sub-bids about Nov. 15; Harvey P. Smith, Archt., Natl. Bank of Commerce Bldg.

Va., Williamsburg—Williamsburg Holding Corp., Kenneth Chorley, Resident V.-P., having plans drawn for expenditure of additional \$1,000,000 this winter on restoration of Colonial Williamsburg; projects considered for immediate execution include restoration of old capitol, building new city hall, and courthouse, building additional stores and restoration number Colonial homes; Todd & Brown, Inc., Contrs., Robert Trimble, Jr., Mgr. in charge of all restoration work; Perry, Shaw & Hepburn, Archts., 141 Milk St., Boston, Mass.

5-29

# LEADITE

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## Philadelphia Suburban Water Company —uses LEADITE exclusively

This well-known Water Company, one of the C. H. Geist properties, supplies a population of about 315,000 persons through approximately 900 miles of water mains.

It is a significant fact that they have USED LEADITE EXCLUSIVELY on approximately 230 miles of their water mains laid in the last 4½ years (sizes up to 24 in. inclusive, and pressures averaging 60 lbs. per sq. in.—with maximum considerably above that fig-

ure). In fact, even prior to 1925, this Company used LEADITE extensively.

The daily per capita consumption of water is slightly under 60 gallons, which includes Domestic, Commercial and Industrial users—also fire, flushing and municipal purposes. This figure also includes all losses by leakage. These figures are excellent proof of tightness of pipe lines.

Mr. Carleton E. Davis\* is Manager of the Philadelphia Suburban Water Company.

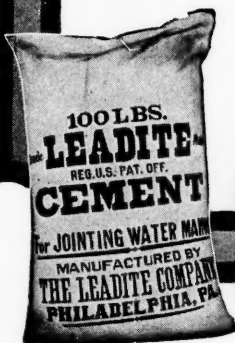
\*Mr. Davis is a Past President of both the American Water Works Association and the New England Water Works Association—also former Chief Engineer of Philadelphia Bureau of Water for 11 years.

*The pioneer self-caulking material for c. i. pipe.  
Tested and used for over 30 years.  
Saves at least 75%.*

### THE LEADITE COMPANY

Land Title Building

Philadelphia, Pa.



## No Caulking





## Schools

Ark., Mountsburg—Consolidated School Dist. No. 16 let contract to Walter Vernon, Oak St., Fort Smith, for \$20,000, 1-story, native stone, 7-classroom and auditorium school; Haralson & Nelson, Archts., Merchants Natl. Bank Bldg., Fort Smith. 10-2

Ky., Lexington—University of Kentucky. Dr. Frank L. McVey, let contract at \$53,475 to W. T. Congleton Co., Third and Walton Sts., for farm engineering building; 2 stories, fireproof, gypsum roof, conc. floors; also let contract at \$16,800 to W. T. Congleton Co. for observatory; Frankel & Curtis, Archts., Hernando Bldg. 11-6

Ky., Princeton—University of Kentucky. Dr. Frank L. McVey, Pres., Lexington, let contract to Ewan & Farmer, Princeton, for \$10,000 sub-experiment station.

La., Chatham—Jackson Parish School Bd., W. C. McClelland, Supt., Jonesboro, let contract at \$28,784 to Pesnell Brothers & Mitchell, Ruston, for 2-story, brick high school; 9 classrooms and auditorium to seat 600; Seymour Van Os, Merchants Bank Building Shreveport, and George F. Lomax, James Bldg., Ruston, Asso. Archts. 10-2

La., Rayville—Richland Parish School Bd. let contract at \$131,869 to W. M. Warner, Shreveport, for 3-story, rein. conc., brick and stone trim high school, 1-story, brick gymnasium building and cafeteria in connection; Edw. F. Neild, Archt., Natl. Bank Bldg., Shreveport. 10-30

La., Start—Richland Parish School Bd., E. E. Keebler, Supt., Rayville, let contract to Frank Masling, 1510 S. Grand St., Monroe, for \$19,500, 1-story, brick grammar school at Rhymes and for \$17,500 brick addition to high school at Start; J. W. Smith & Associates, Archts., Ouachita Natl. Bank Bldg., Monroe; also let contract to E. E. Rabalais & Son, Bunkie, for \$24,133, 1-story, brick grammar school at Holly Ridge; Edw. F. Neild, Archt., City Natl. Bank Bldg., Shreveport. 10-23

Md., Baltimore—Acme Steel & Engineering Co., 917 S. Howard St., Baltimore, has contract for 200 tons struc. steel and concrete

Steel Co., 2 Park Ave., New York, rein. bars for addition to School 84, Johnson and Heath Sts., for which P. C. Street Engineering Co., 404 St. Paul St., has general contract at \$205,900; E. H. Glidden, Jr., Archt., 18 E. Lexington St. 10-16

N. C., Enka—Buncombe County Bd. of Education, A. C. Reynolds, Supt., Asheville, let contract at \$21,435 to Jerry Liner, Lake Junaluska, for brick, fireproof, 8-classroom and assembly hall elementary school; plans by W. J. East, County Archt., Courthouse, Asheville. 10-9

Okla., Drumright—Acme Construction Co., 506½ S. Main St., Tulsa, has contract for \$20,000, 2-story, 35x118 ft., brick school for Tidal Oil Co., 602 S. Cheyenne St., Tulsa. 10-9

N. C., Williamston—Martin County Bd. of Education, R. A. Pope, Supt., let contract at \$26,348 to Thompson Construction Co., Inc., Roanoke Rapids, for 1-story, 111x170 ft., brick and tile school; asphalt shingle roof, conc. and brick foundation; Eric G. Flannagan, Archt., Henderson. 11-9

Tenn., Clarksville—State Bd. of Education, Nashville. See Tenn., Cookeville.

Tenn., Cookeville—State Bd. of Education, P. L. Harned, Chmn., Nashville, let contract at \$162,830 to Foster & Creighton, Fourth and First Bldg., Nashville, for 2-story and basement, rein. conc., brick, stone trim home economics building at Tennessee Polytechnic Institute; R. H. Hunt Co., Archt., James Bldg., Chattanooga; also let contract at \$143,780 to Foster & Creighton or 2-story and basement, rein. conc., brick and tile, stone trim dormitory and demonstration school at Austin Peay Normal School, Clarksville; Emmons Woolwine, Archt., Elendale Ave., Nashville. 10-30

Tenn., Murfreesboro—State Bd. of Education, P. L. Harned, Chmn., Nashville, let contract at \$187,500 to V. L. Nicholson Co., Box 661, Knoxville, for 3-story, rein. conc., brick and tile, stone trim science building and home demonstration building at State Teachers College; Marr & Holman, Archts., Stahlman Bldg., Nashville. 10-30

Tex., San Benito—San Benito Ind. School

Dist. Bd. of Trustees let contract at \$135,932 to Meriwether & Sauers, Harlingen, for 2-story, brick, stone and rein. conc. junior-senior high school and repairs to present high school; plumbing and heating, A. J. Monier, 1446 N. Flores St.; electric wiring, Lloyd-Peale-Dittmar Electric Co., 1205 E. Houston St., both San Antonio; also let contract at \$8500 to W. H. Chambers, San Benito, for addition and repairs to South side elementary school; at \$10,985 to A. McMillen, San Benito, for Mexican School; Phelps & De-wees, Archts., Gunter Bldg.; W. E. Simpson Co., Engrs., Milam Bldg., both San Antonio. 10-23

## Stores

Ga., Atlanta—Atlanta Belting Co., 508 Whitehall St., S. W., let contract to E. C. Seiz, 131 Spring St., N. W., for alterations and addition to building; \$10,000, 30x140 ft., 1-story, wood floors, built-up roof; Robert & Co., Archts.-Engrs., Bona Allen Bldg. 10-30

Mo., St. Louis—Joseph P. Bauer, 4340 Neosho St., erect \$10,000, 2-story, 27x65 ft., brick store and dwelling, 4719-19A Morganford St.; comp. roof, hot air heat; M. C. Bartels, Bldr., 4910 Gravois Ave.; C. N. Breitschuh, Archt., 3508 Humphrey St. 11-6

Okla., Tulsa—O. O. Owens, Ritz Bldg., let contract at \$25,000 to Irving Williams, 315 E. 18th St., for \$25,000, 1-story, 75x140 ft. brick store; Smith & Senter, Archts., Phil-tower Bldg. 11-6

Tex., Brownsville—W. T. Grant Co., H. T. Williams, Ch. of Construction, 1441 Broadway, New York, let contract to W. E. Velton, Brownsville, for \$35,000, 2-story, 15x120 ft., brick, tile an drein. conc.; stucco, wood and conc. floors. 10-23

Tex., Temple—W. H. Townsend started work on rebuilding store building recently damaged by fire.

## Warehouses

Okla., Oklahoma City—Fluid Packed Pump Co. started work on office and warehouse, 29th and Santa Fe Sts.; Harry Reynolds Co., Contr., 915 N. Hudson St.

## THE CLASSIFICATIONS IN THIS SECTION ARE:

WANT  
SECTION

## Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

Building Materials  
and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

## Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

## Machinery and Supplies

Rollers (Gravity).—W. M. Smith & Co. (Mchy. Dealer), 4601 First Ave., North, Birmingham, Ala.—Wants to represent manufacturers of gravity rollers.

Engine (Diesel) and Generator.—Glendon, N. C.—Wants prices and data on 200 to 250 h. p. Diesel engine and generator, complete, used, or steam plant complete, good condition.

Flour and Feed Manufacturing Machinery.—Kingrea Bros., 38 Monroe St., Narrows, Va.—Want prices and data on machinery for producing 100 to 150 bbl. flour, 1000 bu. corn meal, 10 tons mash and mixed feed for poultry, 20 tons mixed feed and 20 tons cracked corn daily; may require blending plant for flour and hammer mill for feed grinding.

Planing Mill, etc.—Mike Galler, Keysville, Va.—Wants prices and data on used planing and other used machinery.

Tractor.—Johnson & Hoehler, Inc. (Mchy. Dealers), Fernwood, Pa.—Want prices, full details, condition, age on used Cleveland tractor, 2 or 2½ tons.

Strawberry Capping Machine.—John H. Dulany & Son (Fruit Packers), Fruitland, Md.—Want to contract with firm to manufacture, on royalty basis, strawberry capping machine which will remove caps and stems mechanically; to be used in cold packing industry where berries are capped, washed, sugared and packed into barrels and held in cold storage for preserving and ice cream industries.

Trench Hoe.—W. M. Smith & Co. (Mchy. Dealer), 3601 First Ave., North, Birmingham, Ala.—Wants prices and data on trench hoe, full revolving crawler type traction, ½ to ¾ yd. capacity.

Water Works System.—Town of Walton, Ky., D. H. Vest, Clk., 119 N. Main St., has \$25,000 available for water works system, population 850, and wants prices on material and equipment.

R. B. Stewart, 2112 Park Ave., Fort Myers, Fla.—Wants prices and data on following:

- (1) Asphalt Distributor.
- (2) Pulverizer.

W. M. Smith & Co. (Mchy. Dealer), 4601 First Ave., North, Birmingham, Ala.—Wants prices and data on following:

- (1) Edger—3-saw
- (2) Magnet—mushroom type, scrap handling.
- (3) Planer—4-side, capacity 3x10 or over.

## Miscellaneous

Burner (Kerosene).—W. E. Toler (Mchy. Dealer), Pawnee, Okla.—Wants prices and data on large size kerosene burner, wick or wickless.

Lumber (Red Cedar).—B. Jordan, Monticello, Ga.—Wants prices and data on 1000 ft. red cedar.

B. Jordan, Monticello, Ga.—Wants prices and data on following:

- (1) Lathe—Waymoth, No. 3
- (2) Sand Papering Machines
- (3) Woodworking Machinery—for hardwood.

Geo. T. Robinson, Pres. Reversible Map & Chart Co., 933 Madison Ave., P. O. Box 1121 Daytona Beach, Fla.—Wants data and prices on following:

- (1) Screws—bolts and wing nuts
- (2) Washers
- (3) Punch Press
- (4) Stove Bolts—½-in. round head stove bolt, 2¼-in. long with wing nut and suitable washers.

Geo. T. Robinson, Pres., Reversible Map & Chart Co., 933 Madison Ave., P. O. Box 1121, Daytona Beach, Fla., wants data and prices on following:

- (1) Lumber—Oak 1¼-in. wide and ¾-in. thick.
- (2) Maps and Charts—double faced of all kinds in quantities.
- (3) Rollers—metal and wooden spring in quantities.
- (4) Stain—dark oak in quantity
- (5) Slated Cloth Blackboard

## Building Material and Equipment

Cherry Park Estates, Inc., Rock Hill, S. S., interested in literature and information on fireproof dwellings.

G. Tandy Smith, Jr., Archt., Guthrie Bldg., Paducah, Ky., wants prices on following for \$75,000 administration building, West Kentucky Industrial College:

- Cast Stone
- Flooring—hardware, asphalt, tile
- Limestone
- Metal Doors
- Roofing—built-up, asbestos shingle
- Vaults
- Tile—hollow
- Ventilators.

W. W. McBryde, Ethel, Miss., wants prices on following:

- Flooring—hardwood, linoleum
- Metal Ceilings
- Roofing—asphalt shingle
- Steel Sash and Trim.

## Bids Asked

Barges.—U. S. Engr. Office, Rock Island, Ill.—Bids Nov. 25 for ten 10x24x5 ft. steel material barges.

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W. S. Barstow &  
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*Engineering—Design—Construction*

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**Boiler Tubes.**—U. S. Engr. Office, Huntington, W. Va.—Bids Nov. 18 for boiler tubes for U. S. dredge Cincinnati.

**Bridge.**—New Orleans, La.—See Construction News—Bridges, Culverts and Viaducts.

**Cabinets (First Aid).**—U. S. Engr. Office, Huntington, W. Va.—Bids Nov. 17 for first aid cabinets for locks, boats, etc., Great Kanawha River.

**Diesel Engines.**—See Electric Light and Power Plant.

**Dikes.**—U. S. Engr. Office, St. Louis, Mo.—Bids Nov. 26 for constructing 4000 lin. ft. piling dikes, Missouri River, Dozier and Centaur Bends.

**Dikes.**—U. S. Engr. Office, St. Louis, Mo.—Bids Nov. 26 for 9000 lin. ft. piling dikes, Missouri River, Weldon Spring, Mo.

**Dikes.**—U. S. Engr. Office, St. Louis, Mo.—Bids Dec. 3 for 10,000 lin. ft. piling dikes, Missouri River, Bonhomme Bend.

**Distribution System.**—See Electric Light and Power Plant.

**Dry Goods, etc.**—General Supply Committee, Washington, D. C.—Bids Nov. 21 for dry goods, flags and cordage, as required during period Jan. 1 to Mar. 31, 1931.

**Electric Light and Power Plant.**—City of Sikeston, Mo., W. A. Fuller Co., Engrs., 2016 Shenandoah Ave., St. Louis—Bids Nov. 24 for furnishing material, labor and constructing complete electric light and power plant; work includes: Sec. 1—Power house building of brick, 40x80 ft., oil storage tank, 20,000 gal. capacity and cooling tower; Sec. 2—Two 600 h. p. Diesel engines, generators, exciters and auxiliaries; Sec. 3—Water softener for circulating water; Sec. 4—Switchboard—8 panel—1200 kw. ultimate capacity; Sec. 5—Electric distribution system material, f. o. b. cars; Sec. 6—Construction of distribution system, tools and labor only; Sec. 7—Furnishing and installing electric connections and station wiring.

**Elevator.**—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids Dec. 2 for installing freight elevator in U. S. post office, etc., extension and remodeling.

**Exciter, Conduits, Cables, Potheads and Switchboard.**—Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids Nov. 26 for 10-kw. exciter, conduits, cables, potheads and switchboard, installed at Marine Barracks, Parris Island, S. C.

**Generators, etc.**—See Electric Light and Power Plant.

**Hack Saw.**—See Miscellaneous Machinery, etc.

**Heaters, etc.**—Contracting Officer, Q. M. Corps, Fort McClellan, Ala.—Bids Nov. 17 for 16 water heaters and 6 hot water tanks.

**Illuminated Signs, etc.**—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids Nov. 20 for illuminated signs, etc., in U. S. internal revenue bldg., Washington.

**Lathes.**—See Miscellaneous Machinery, etc.

**Lumber.**—Tunica County Supvrs., L. C. Shannon, Clk., Tunica, Miss.—Bids Dec. 1 for 100,000 ft. bridge lumber.

**Miscellaneous Machinery, etc.**—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Nov. 18 for hydraulically controlled drill; bids Nov. 25 for motor driven pipe and tube bending machine, single ball bearing type surfacer machine with motor, motor driven engine lathe and spare carbon brushes, screwdrivers, rules and tapes, electric soldering irons, vices, drill chucks, engine lathe, motor driven geared selective head type engine lathe and motor driven hack saw.

**Miscellaneous.**—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Nov. 26 for following, Sch. 2605:

**Pipe, pipe fittings, truck columns, cable and bells, range boilers, sanitary fixtures, cleanouts, floor drains, siphons, valves, cocks, grindstones, locks, hinges, etc.**

**Partitions (Metal and Glass), etc.**—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids Nov. 17 for metal and glass partitions, etc., U. S. Internal Revenue bldg., Washington, D. C.

**Pipe and Tube Bending Machine.**—See Miscellaneous Machinery, etc.

**Railroad Track Changes.**—U. S. Engr. Office, First New Orleans Dist., New Orleans, La.—Bids Dec. 3 for track changes. See Construction News—Railways.

**Road.**—Tunica, Miss. See Construction News—Roads, Streets and Paving.

**Sirens.**—U. S. Coast Guard Headquarters, Washington, D. C.—Bids Dec. 8 for 35 hand-operated siren horns.

**Stationery Supplies.**—General Supply Committee, Washington, D. C.—Bids Nov. 18 for stationery, paper, paper articles and school supplies as required during period Jan. 1 to Mar. 31, 1931.

**Steel.**—Claiborne County Supvrs., W. L. Allen, Clk., Port Gibson, Miss.—Bids Dec. 1 steel.

**Structural Steel Plates.**—U. S. Engr. Office, Huntington, W. Va.—Bids Nov. 18 for structural steel plates for U. S. dredge Adams.

**Surfacer.**—See Miscellaneous Machinery, etc.

**Switchboard.**—See Electric Light and Power Plant.

**Tank and Tower.**—See Electric Light and Power Plant.

**Ties (Railroad).**—Chemical Warfare Ser-

vice, Edgewood, Md.—Bids Nov. 18 for 635 white oak cross ties and set of white oak switch ties, creosoted.

**Timber (White Oak).**—U. S. Engr. Office, Huntington, W. Va.—Bids Nov. 19 for white oak timber.

**Upholstery Supplies (Fasteners).**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Nov. 20 for upholstery supplies (fasteners), delivery Quantico, Va.

**Wharf.**—U. S. Engr. Office, Charleston, S. C.—Bids Nov. 18 for wharf, U. S. Engr. depot, opposite City of Georgetown, S. C.

## INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers, whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

### Opens New York Office.

The Headley Emulsified Products Company, of Philadelphia, has opened a New York office in the Chrysler building, in charge of P. L. Fosher as district manager. The company manufactures asphalt waterproofing, damp-proofing, coating and paving materials.

### Southeast Representative.

The American Manganese Steel Company, Inc., Chicago Heights, Ill., has appointed the Southern Tractor Supply Co., Durham, N. C., as exclusive representative for the sale of Amasco manganese steel crawler tractor links and sprockets in the District of Columbia, North Carolina, South Carolina, Eastern Tennessee, Virginia and West Virginia. J. H. Doran is identified with the Southern Tractor Supply Company, a new organization.

### Westinghouse Traction Brake Appointments.

O. W. Swartz has been appointed by the Westinghouse Traction Brake Company, a subsidiary of the Westinghouse Air Brake Company, Wilmerding, Pa., as industrial representative for the sale of Westinghouse-National air compressors in the Southwest, with headquarters in Dallas. C. D. Brown has been appointed industrial representative for the Philadelphia district.

### Checks Automatic Machine Operations.

An automatic machine to check operations of another automatic machine has been employed by the H. J. Heinz Company of Pittsburgh, Pa., to prevent errors in packaging their cereal products. The cereals are packed in cartons protected by a sealed, waxed paper envelope. The waxed paper, however, was found to cover up and obscure the design and imprinting on the carton, so the manufacturers of the paper, the Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich., devised a process of printing design and directions on the paper itself, which is shipped completely imprinted in large rolls. It is cut into proper lengths by the automatic machine which wraps the carton and seals it. To solve the problem of slippage and creepage, a General Electric photo-electric equipment actuated by variations in the intensity of a beam of light was used. A method evolved was found to be generally applicable to automatic wrapping machines using a continuous method of paper feed. Variable speed control mechanism of the apparatus was designed and built by the Lewellen Manufacturing Company, Columbus, Ohio, while the wrapping machine is the product of the Johnson Automatic Sealer Company, Battle Creek, Mich.

### Industrial Windows and Doors

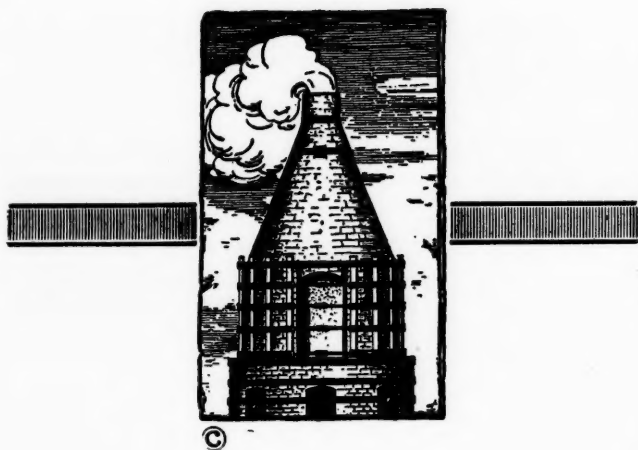
Entering the field of industrial windows and doors for various types of installation requirements, the Campbell Industrial Window Company, Inc., New York, recently organized, announces a line of products which includes casement windows, horizontally pivoted industrial windows and projected windows of the commercial, architectural and office types, utility windows and continuous windows and doors. Doors of various types are manufactured, including standard doors and frames, industrial doors, pier and wharf doors, fire department doors and hangar doors. The company handles a complete line of window hardware and operating devices and also furnishes high grade cast iron products, such as basement windows, coal chutes, chimney and ash pit doors, ash dumps for fire places, fireplace dampers and ventilators for foundation and attic walls. Milton T. Clark, formerly vice president of the Truscon Steel Company, Youngstown, Ohio, is president of the new company, which is owned by the Campbell Metal Window Corporation, Baltimore and New York, a subsidiary of the American Radiator & Standard Sanitary Corporation. The formation of the new company completes the group of Campbell window manufacturers which include the Campbell Casement Window Corporation, New York, and the Voigtman Metal Window Corporation, Kalamazoo, Mich., manufacturers of hollow metal windows.

### Opens Consulting Engineering Office

A. H. Armstrong, recently chairman of the electrification committee and consulting engineer for the transportation department of the General Electric Company, has opened a private consulting engineering office at 16 Troy Road, Schenectady, N. Y. Mr. Armstrong has made numerous studies of railway electrification problems and has been connected with such work as undertaken by a number of railway companies. He is a member of the American Institute of Electrical Engineers and other technical associations and societies.

### Irving Iron Works Vice-President.

Paul L. Price, associated for 19 years with the Irving Iron Works Company, Long Island City, New York, more recently as treasurer and general manager, has been made vice-president in charge of research and development. He will also continue as chief engineer of the company. The Irving Iron Works Company manufactures steel mesh grating flooring and steps and steel mesh armoring for floors, bridges, highways, etc.



## Atlanta Terra Cotta Stock Designs

facilitate the use of Terra Cotta on the smaller buildings where a necessity exists for low costs and the shortest deliveries permitted by good manufacturing practices.

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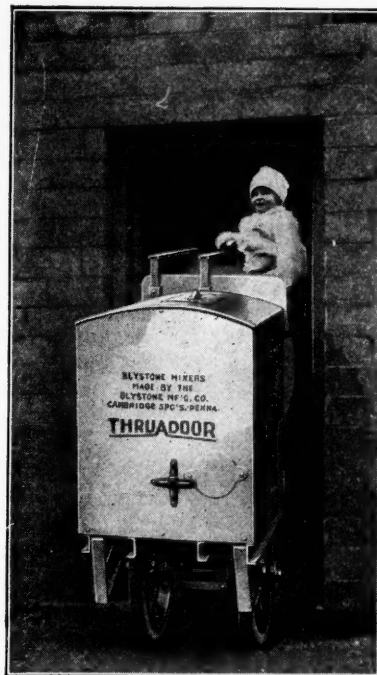
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## Trade Literature

**Art Bronze Work.**—A catalog issued by the Ohio Art Bronze Industries, a division of the Ohio Pattern Works & Foundry Company, Cincinnati, has for its subject art as portrayed in bronze. In a foreword it is declared that the creative genius of the designer, the correct compounding of the necessary metals and the expert craftsmanship that gave bronze its popularity in past ages have been employed by the company in the manufacture of its products.

**Management Problems.**—As a unit of the University of North Carolina Social Study Series, the University of North Carolina Press, Chapel Hill, has issued a volume on Management Problems, with special reference to the textile industry. The publication contains 264 pages and is divided into four parts, in addition to preface and index. Part 1 deals generally with textile problems; part 2 with personnel; part 3 with selected problems, and part 4 is an appendix. The work was edited by G. T. Schwenning, Associate Professor of Business Administration, University of North Carolina. The price is \$2.

## Credit in Drought Areas

Progress in the drought areas in the formation of agricultural credit corporations which will discount farmers' agricultural paper with the Federal Intermediate Credit Banks is reported from Washington. Many local banks in agricultural communities have made contacts with the Federal institutions which may prove helpful should there be a necessity to discount farmers' notes with them.

Several corporations have been set up in the South and many more are in process of organization. These corporations usually have an authorized capital of \$25,000 to \$50,000 and ordinarily will be able to discount farmers' notes to the extent of six to eight times their paid-in and unimpaired stock and surplus, according to the character of the paper offered for discount. Thus, provision has been made to bring into the South a large sum of "new" money, as the Federal Intermediate Credit Banks secure most of the money which they loan from large money centers, principally in the sale of tax-exempt debentures in the eastern cities.

In the Louisville and in the Houston districts, 30 agricultural credit corporations or livestock loan companies already have outstanding loans discounted with the Intermediate Credit Bank amounting to many millions of dollars. An effort is being made in the St. Louis bank district, covering Arkansas, Missouri and Illinois, to form credit corporations in each of the sub-divisions of those states, as divided by the State Bankers

**Westinghouse Catalog.**—A new general catalog for 1931-1932, containing 1352 pages, has been issued by the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa. The publication presents complete listings of distribution apparatus, switchgear apparatus, except large oil circuit breakers and power switchboards; lighting equipment, domestic appliances, gearing apparatus and current-collecting devices; condensed listings of industrial motors and control apparatus, industrial heating apparatus, commercial cooking equipment and other products. Features of the catalog are an "instant index" and illustrated introductory section printed in two colors.

**Cotton Textile Industry.**—Under the caption, "King Cotton is Sick," Claudius T. Murchison, Professor of Applied Economics, University of North Carolina, has prepared a volume of 190 pages, published by the University of North Carolina Press, Chapel Hill. Professor Murchison discusses depression in cotton textile industry, signs of which began to appear as far back as 1926, he states, and ends his volume with a chapter outlining a solution of problems as he sees them. The cotton industry in recent weeks has made some moves toward equalization of supply and demand, which came too late to be discussed in the volume. The price is \$2.00.

Association. The bankers in the district covered by the bank at Baltimore—Maryland, Virginia, West Virginia, Delaware and Pennsylvania—have shown much interest in the subject of intermediate credit, and bankers in the New Orleans district also are showing interest.

## Big Ice Cream Cone Plant in St. Louis

The Linda Baking Co., Ernest A. Hamwi, President, St. Louis, Mo., has remodeled and equipped a plant with new machinery at a cost of approximately \$500,000, to produce 2,000,000 ice cream cones daily. Cones will be manufactured in many shapes and sizes; some are similar to dessert dishes and will stand of themselves as ordinary dishes.

Of the daylight type, the plant is 100 by 240 feet, 3 stories in height. Floors are of hardwood and concrete, ceilings of metal, and aluminum paint was used. The plant is equipped with steam heating plant, and modern sprinkler system. Ninety per cent of the machinery, consisting of 24 automatic cone and cup machines, which will make 15 different baked cake cups and cones, was manufactured in the firm's own shops.

Castings were manufactured by the Liberty Foundry Co.; air compressors by Curtis Manufacturing Co.; lumber, C. J. Reinecke Lumber Co., all St. Louis; steel, Jos. T. Ryerson & Son, Inc., Chicago, Ill. and St. Louis; speed controls by Reeves Pulley Co., Columbus, Ind.

## Corporation Encourages Farm Forestry

[By W. L. Gooch, Forester, Hummel-Ross Fibre Corporation, in the Forest Worker.]

The Hummel-Ross Fibre Corporation, Hopewell, Va., is buying from farmers and small landowners upwards of 40,000 cords of loblolly and shortleaf pine pulpwood a year. This wood comes from within a 40-mile radius of Hopewell and is delivered to the plant by wagon or truck. Any quantity of wood from one cord up is accepted, and payment is in cash. This cash market has been a great help to farmers in their present rather bad economic situation. If a farmer has a bit of trading to do in town he brings in a load of wood, gets his cash, and then does his buying. As for the company's side of it, this farm-cut wood is cheap wood; the cost of transportation has been eliminated, also the cost of field supervision and the contractor's bonus formerly paid when wood was bought through agents 50 to 100 miles from Hopewell and shipped in by rail.

The company is interested in keeping near-by forest lands growing pine. Other things equal, in years to come the wood from these near-by forest lands should be the cheapest available, since the transportation factor is largely absent. So the company, through its forestry department, is offering farmers in the vicinity advice on the right methods of cutting pine for pulpwood and demonstrations of such methods. These farmers are learning the value of leaving seed trees and some are systematically thinning their pine stands, removing the poorer trees where these are suitable for pulpwood and otherwise improving the growing condition of the better trees in the stand. The company feels that this service given to landowners in the vicinity of Hopewell will in a measure obviate the necessity of purchasing and owning larger areas of timberland in order to assure raw material requirements in the years to come. It now owns some 8000 acres. If the same kind of forest and land management is given to other privately owned forest lands in the vicinity of the plant, much the same results will be realized years hence in the way of cheap pulpwood, without the necessity of the company tying up working capital in an extensive land-purchase program.

## Jacksonville Industrial Survey

Authorized by and made under the auspices of the Advertising Committee of the city council of Jacksonville, Fla., George W. Simons, Jr., civil engineer, recently completed an industrial survey of Jacksonville, the stated purpose being to assemble essential and useful information of value to prospective industry and business and to interests contemplating industrial or commercial expansion. An attractively bound report covering the survey presents a voluminous text and a large number of tables and charts bearing on the findings.



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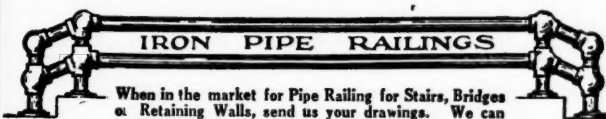
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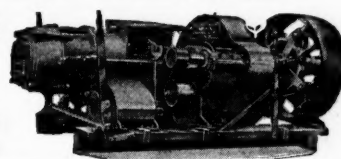
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## Memphis Building Activities

Memphis, Tenn.—Building construction in Memphis for the first 10 months of this year, as revealed by permits issued by Building Commissioner J. E. Hollingsworth, represents a value of more than \$2,000,000 in excess of the value of permits issued in the first 10 months of 1929. In 10 months of 1930, the commissioner issued 4,449 permits, representing a cost of construction of \$9,429,348, as compared with 3,698 permits issued in the corresponding period of 1929, representing a cost of construction of \$7,375,813.

Indicating an investment of approximately \$750,000, the William Len Hotel with 250 rooms and baths has been completed. Eugene John Stern was the architect for this structure and W. Frank Ault, general contractor, both of Little Rock, Ark. Another outstanding construction project in the downtown business section is the United States post office on the west side of Front street at the head of Madison avenue, to involve an expenditure of \$1,500,000. This construction is in the nature of an addition and remodeling job and is about 50 per cent complete. Plans for the work were prepared in the office of Jas. A. Wetmore, Acting Supervising Architect, Treasury Department, Washington. The National Construction Co., Inc., Atlanta, Ga., is handling the general contract.

A civic improvement of major importance now under way is a new river scenic boulevard being built along the east side of the Mississippi River from Jefferson street to Virginia avenue, which is the approach to the Mississippi River bridge into Arkansas. Memphis is a bluff city some 40 to 50 feet above the river and the driveway is being built about midway the slant of the bluff. Two parks are being provided on the route, one on the river bank at the foot of Jefferson avenue and the other on the river bank at the foot of Beale street. The roadway will provide a north and south boulevard through the city, with the business district to the east and the Mississippi River to the west, and there will be practically no cross streets to carry traffic.

## Installing Pig Casting Machine

Woodward, Ala.—Said to be the longest machine of its type, a pig casting machine with an overall length of 175 feet, is being installed at the blast furnaces here of the Woodward Iron Company, Frank H. Crockard, president. Work is well under way, contracts having been placed for the casting house with the Ingalls Iron Works Co., Birmingham, and for 75-ton ladles to be used in connection with the plant with

William B. Pollock & Co., Youngstown, Ohio. Other equipment contracts have also been awarded. The building will be 67.5 feet wide, with a lean-to 25 by 100 feet, and is expected to be ready for operation early in 1931.

## Where the South Sleeps on the Job

[From Selma (Ala.) Times Journal.]

The criticism is often heard that the South is remiss in doing its share in stimulating the utilization and consumption of its own products. The criticism is, no doubt, well taken. There is much ballyhooing and exhortation for the South to find new uses for its great staple, cotton, but very little substantial progress appears to be made in this direction. The states of North Carolina and Louisiana have better records in home loyalty than have any of the other Southern commonwealths.

In North Carolina, most of the cotton grown is manufactured in the mills operating within that state. To such an extent does North Carolina manufacture its cotton, the ports of the state ship out little of the crop. The tobacco grown in the state is also manufactured chiefly in North Carolina factories. The great tobacco manufacturing plants at Durham, Winston-Salem and other points furnish an outlet for the state's great tobacco crop. Furniture factories at High Point and other Western North Carolina towns consumed large quantities of timber produced locally.

Over in Louisiana rice is one of the principal crops, and the local population helps greatly in consuming it. Rice is on the menu in public eating houses in Louisiana more than in any other state, perhaps, and many of the people in their homes regard rice as a staple food product.

Efforts to stimulate the use of cotton in the South by Southern people have been spasmodic, and productive of no great results. Instead of making a special point of wearing cotton clothing, people in the South for the most part accept the standardized materials of the day. With millions of bales of surplus cotton stored in their midst, and the producers suffering from lack of a market, we indifferently choose clothing made of materials produced elsewhere. We even wrap our surplus cotton in jute, a material imported from India, and then wonder why the cotton demand does not improve. We put other Southern products in containers not made of cotton, when cotton bags would be better, and we make no demand that products we buy be transported to us in cotton containers. The cotton South is still depending on someone else to furnish the market for its staple crop, when it might enlarge that market very perceptibly itself by putting its cotton to use.

Agencies of the Federal government have been engaged in research work intended to find new uses for cotton, and the Federal government is backing up its interest in the welfare of the cotton producer by purchasing annually more than 200 varieties of cotton textiles. If the masses of Southern consumers would show as much interest in getting cotton into consumption as does the Federal government, we would be hearing less about underconsumption of the staple.

## Acquires 59 Petroleum Marketing Companies

Tulsa, Okla.—Up to the end of October, the Sinclair Refining Co., chief domestic marketing subsidiary of the Sinclair Consolidated Oil Corp., New York, had acquired 59 petroleum marketing companies operating in 17 states. This does not include facilities of the Pierce Petroleum Corp., previously acquired. The companies bought represent 1511 bulk distributing plants, service stations and dealer outlets. In addition, the Sinclair company purchased from individual distributors 7 bulk plants and 52 service stations and obtained under lease 10 bulk plants and 169 service stations. Companies acquired in Southern states include:

**Alabama**—Petroleum Products Co., Lafayette; Consumers Oil Co., Bay Minette  
**Arkansas**—Home Oil Co., Ashdown; Royal Oil Co. and Guenters, Inc., Little Rock; Warden Oil Co., North Little Rock; Burton Oil Co., Nettleton  
**Georgia**—Marion County Oil Co., Buena Vista  
**Louisiana**—Liberty Products Co., Ponchartroula  
**Mississippi**—Winston Oil Co., Noxapater  
**North Carolina**—Piedmont Oil Co., Gastonia; Imperial Gas & Oil Co., Winston-Salem; Napoleon Oil Co., Marion; Cleveland Oil Co., Shelby  
**South Carolina**—Swansea Gas & Oil Co., Swansea; Superior Oil Co., Batesburg; Calvert Oil Co., Abbeville; Citizens Oil Co., Seneca  
**Texas**—Brazos Oil Co., Richmond; Sanders Oil Co., Brenham; Black's Tire Store and Home Petroleum Co., Huntsville; Gerlach Bros., Livingston; Dixon Oil Co., Burton; Ernst Bros., Kingsville; Willis Mercantile Co., Willis; Home Petroleum Co., Madisonville; Waller County Oil Co., Waller; Home Oil Co., Sweetwater; Doupitt & McAskill, Edinburg; Eagle Lake Grain Co., Eagle Lake; Perry Oil Co., Freeport  
**Virginia**—Fulton Oil Co., Gate City; Russell Gas Co., Honaker; Midland Oil & Gas Co., Abingdon; Blue Ridge Oil Co., The Plains; U. S. Oil Co., South Hill; Monticello Oil & Gas Co., Charlottesville; Central Oil Co., Norton  
**West Virginia**—Arrowhead Gasoline Co., Cameron.

## 36-Mile Section of Gas Line

Mobile, Ala.—The Natural Gas Engineering Corporation, Birmingham, handling the construction of the proposed natural gas line from Mobile to Pensacola, Fla., for the Southern Natural Gas Corporation, Birmingham, has awarded contract for 36 miles of the line to W. S. Bibb of Birmingham. This section covers the line from a point about 7 miles south of Bay Minette, Ala., to Pensacola. The remainder of the line, 38 miles, will be constructed by the Natural Gas Engineering Corporation, which has begun work on the most difficult section—a swamp about 14 miles long. The line will be of 12¾-inch steel pipe, outside dimensions. Construction through the swamp will be handled by sinking the pipe with heavy couplings and added security will be provided by anchoring it to trees. The work is expected to be completed by December 10.

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## Florida Paper-Making Possibilities

In an associated press dispatch from Tallahassee, a summary is given of a new bulletin, "The Possibilities of Pulp and Paper Making in Florida," by Harry Lee Baker, Florida State Forester.

In this bulletin Mr. Baker points out that:

"High quality kraft paper can be manufactured from Florida pine timber for which there is a ready market.

"Consumption of kraft paper in the United States in the last decade increased 233 per cent and to offset the average annual increase in consumption annual establishment of three new pulp mills having a daily capacity of 100 tons is required.

"With no increase in the production of existing mills it would require 16 new mills of average capacity to offset present day imports of kraft pulp into the United States.

"Bleached book and magazine paper is being manufactured in the South today. Experimental work is in the advanced stages, indicating that there are strong possibilities that Southern producers soon will be manufacturing white wrapping, bond and newsprint papers.

"Pulp wood and transportation costs are the two principal factors to be considered in the establishment of a new pulp industry in any region. Pulp wood at the mill in Florida costs less than one-half the average for the United States. With transportation costs added, Florida producers of paper can lay down their products in New York much cheaper than can Northern producers, the difference for kraft paper in favor of Florida products being estimated at \$6.56 a ton.

"The raw materials essential to the conversion of wood into pulp and paper are abundant in the South and many are particularly North Florida products.

"Coal from the Birmingham, Ala., district and oil from Texas and Mexico can be shipped to Florida Gulf ports at low rates. Florida is closer to the natural fuel supply than most of the Northern mills.

"Hydro-electric power is abundant and cheap in the South.

"Florida's climatic advantages mean lower plant investment.

"There is no place in Florida to which water transportation is not available by means of a short rail or truck haul. Florida is served by five of the 19 great railroad systems.

"Florida has not levied any nuisance taxes.

"The serious timber depletion in the North is causing pulp mill executives to look to the South for future supplies of pulp wood.

"There is enough pulp wood in Florida to keep 16 200-ton pulp mills running for 30 years and at the end of that period, under fire protection and crude forestry practice, there would be more new growth than when the mills begin to operate.

"Young pine timber in Florida will grow to pulp wood in 15 to 20 years and

in general Florida medium land will produce six times as much pulp wood per acre as the average in the Northern spruce regions.

"Florida has an annual rainfall of 50 to 60 inches which is largely responsible for the fact that the land is readily restocked with young growth where fires are kept out.

"Florida is the only State that produces through its full area the rapid growing, short rotation slash pine, heralded as the premier of trees.

"Abundant restocking of land and fast growth of trees in Florida would keep factory costs at a minimum and insure perpetual operation of the industry.

"Florida, so far as timber is concerned, is an undeveloped State having 23,000,000 acres of forest land."

## Wall Plaster and Compositions

Preliminary figures on wall plaster, wall board and floor composition for 1929 show a total of \$60,398,664, a decrease of 18.4 per cent from 1927, the previous census, the Department of Commerce reports. The total for 1929 is made up as follows: Gypsum plasters, 3,133,666 tons, valued at \$19,950,452; wall plasters, other than gypsum, 101,016 tons, \$4,128,793; gypsum board, 924,516 tons, \$17,580,161; fiber wall board and rigid fiber insulation, 457,481,315 square feet, \$13,892,249; flexible fibre insulation, 79,794,953 square feet, \$2,350,220; floor composition, \$2,496,789. These materials produced outside the industry in 1927 were valued at \$7,276,124, or 9.8 per cent of the total value of this class of products made within the industry. The corresponding value for 1929 has not yet been ascertained.

### SUMMARY FOR THE INDUSTRY.

	1929	1927
Number of establishments .....	227	221
Wage earners (average for the year).....	7,421	10,014
Wages .....	\$10,098,138	\$14,411,777
Cost of materials, fuel and purchased electric current .....	\$27,832,219	\$31,998,385
Products, total value.....	\$69,499,100	\$83,856,008
Wall plaster, wall board and floor composition .....	\$60,398,664	\$74,044,407
Other products.....	\$9,100,436	\$9,811,601
Value added by manufacture .....	\$41,666,881	\$51,857,623

## \$450,000 to Advertise Kentucky

Frankfort, Ky.—Plans for raising a three-year fund of \$450,000 to augment the State's appropriation of \$50,000 annually for advertising Kentucky's resources, industries and attractions, are being worked out by C. Frank Dunn, executive secretary of the Kentucky Progress Commission. Surveys now being conducted in 111 counties of the State, showing the trend of state imports, exports and industries, will probably be reported as a part of the publicity program.

## Made in Texas

[From the Dallas News]

Texas undoubtedly will in time become the center of many industries. It is already well started in that direction, and the wealth derived from its natural resources and its manufacturing is already an important asset in the economic growth of the State. There are, however, certain dangers to be avoided. The State should not seek to attract cheap industries that employ cheap labor and turn out low-grade goods. Texas prefers to rely on a native population who are used to decent standards of living. It is better for the State to grow more slowly, relying on quality of population and manufactures, than to attract a low-grade population engaged in the manufacture of shoddy goods or poorly graded farming products.

Chambers of Commerce might well take interest in the quality of goods and workers in their "spheres of influence," and be prepared to authorize a "Made in Texas" label for those that conform to high standards. Such labeled goods should be on exhibition in the business center of each urban district, and displayed attractively so as to win the attention of citizens and visitors. Presumably not one citizen in a hundred in Dallas could enumerate even partially its list of worth-while manufactured products. These are not sufficiently brought to public attention.

Texans are eager to buy Texas-made goods when these are known and are of guaranteed quality. We are loyal to our State and would prefer to buy its products. Why should not each city or town take a census of its productions and let its citizens make it a point to purchase those in preference, when assured that they have standard value?

In similar fashion the farm products of each county, raised for home consumption, should be given fair marketing opportunities. There is too great a difference at present between the produce prices paid to farmers and those paid by the consumer. High wages should be paid for honest labor; fair prices should be secured for guaranteed goods and produce. Texas does not wish to thrive on cheap labor nor on the toll of impoverished farms. It wishes quality in its population and its goods. It will cheerfully pay fair prices for fair returns in labor and products.

## Cereal Plant Contract

Nashville, Tenn.—General contract to erect a plant here for the Tennessee Cereal Co., with temporary offices in the Independent Life Building, has been awarded to the Wagar Construction Co., Atlanta, Ga. The building will be 196 by 50 feet, 4 stories, of reinforced concrete, with powerhouse and filtration plant adjoining. Machinery contract was awarded to the Allis-Chalmers Manufacturing Co., Milwaukee, Wis., and contract for water equipment to the Permutit Co., New York. Hart & Stone, Nashville, are architects for the building.

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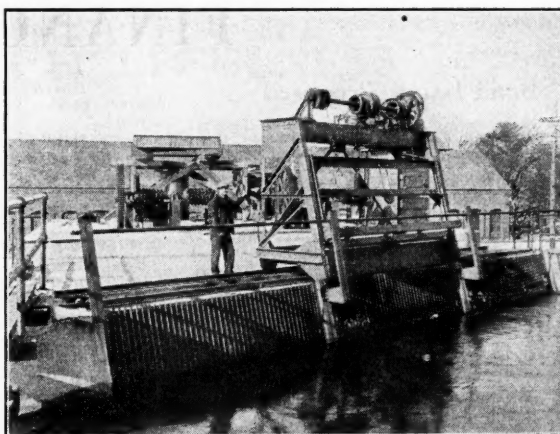
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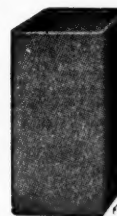
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# FINANCIAL NEWS

## Bond Issues Proposed

Ala., Mobile—Mobile County, E. C. Dood, opens bids Dec. 8 for \$660,000, 5%, \$1000 denom. road and bridge bonds.

Ala., Montgomery—City, J. L. Cobbs, Treas., opens bids Nov. 18 for \$110,000, 5½% Series AV street improvement bonds.

Fla., Jacksonville—Duval County Commrs. probably call election for about Dec. 15 on bonds for \$4,000,000 St. Johns River bridge.

Ga., Thomasville—City, C. C. Pittman, City Clk., opens bids Nov. 24 for \$125,000, 4½%, \$1000 denom. school building bonds.

Ky., Paris—City voted \$150,000 electric plant bonds.

Ky., Walton—Town, D. H. Vest, Clk., voted \$25,000 water works bonds.

Louisiana—State, Huey P. Long, Governor, reported, voted \$75,000,000, paved road and bridge bonds, \$17,000,000 to \$21,000,000 of this for bridge over Mississippi River, New Orleans; \$5,000,000, capitol building bonds; probably open bids Dec. 26 on \$15,000,000, 4½% bonds, first series of state highway issue; bids to be advertised promptly for \$5,000,000 capitol bonds.

La., Alexandria—Rapides Parish voted \$75,000 school bonds in Rigolette School Dist. No. 11 to be sold in Spring 1931.

La., Baton Rouge—East Baton Rouge Parish Police Jury, F. A. Woods, Sec.-Treas., opens bids Dec. 9 for \$100,000 5% bonds for building and maintaining highways.

La., Clinton—City, W. L. Haney, Clk., opens bids Nov. 24 for \$27,000, not to exceed 6%, \$500 denom. public improvement bonds.

La., Gonzales—City, A. B. Corey, Clk., opens bids Nov. 26 for \$10,000, not to exceed 6%, \$500 denom. improvement bonds.

La., Jonesville—Catahoula Parish Consolidated School Dist. No. 2 opens bids Nov. 25 for \$75,000, \$1000 denom. bonds.

La., New Orleans—City, reported, voted \$4,500,000 bonds for municipal refinancing.

La., New Orleans—State, Huey P. Long, Governor, voted amendment to State Constitution authorizing Orleans Levee Bd. to issue \$1,000,000 bonds for airport on Lake Pontchartrain; also amendment authorizing city to issue \$4,500,000 bonds, applying \$3,500,000 to retirement of outstanding indebtedness and \$1,000,000 for rehabilitating public markets.

La., Tioga—Tioga School Dist. voted \$75,000, 6% bonds.

Md., Annapolis—Anne Arundel County, voted \$1,000,000 school bonds.

Md., Baltimore—City, Wm. F. Broening, Mayor, voted \$16,000,000 bonds, including \$10,000,000, harbor improvements; \$2,500,000, airport; \$2,000,000, bridge and paving; \$1,500,000, school.

Mo., Gilman City—City votes on \$60,000 water works bonds.

Mo., Eldon—City voted \$15,000 city hall building bonds.

Mo., Jefferson City—Cole County defeated \$85,000 jail bonds.

Mo., Kansas City—City, reported, may vote in May, 1931, on bonds for 10-yr. improvement plan.

N. C., Greensboro—City, E. G. Sherrill, Clk., plans issuing \$250,000 bonds; \$25,000, water works extension; \$25,000, sewage disposal plant; \$200,000 grade crossing elimination.

N. C., Statesville—Iredell-Rowan County Drainage Dist., reported, opens bids Nov. 18 on \$83,000, 6% bonds.

N. C., Statesville—Madison County Commrs., J. W. Roberts, Clk., opens bids Nov. 15 for \$180,000, not to exceed 6% notes.

Okla., Kingfisher—City, Mary Crosthwait, City Clk., opens bids Nov. 17 on \$25,000 sewage disposal bonds.

S. C., Greenville—Greenville County, W. H. Willimon, Comptroller, opens bids Nov. 19 on \$131,000, not to exceed 5% road bonds.

S. C., Moncks Corner—Berkeley County opens bids Nov. 18 on \$68,600, not to exceed 6% bonds.

Tenn., Huntingdon—Carroll County Court voted to issue \$100,000 county notes.

Tex., Brownsville—Cameron County Water Control Dist. No. 18, Lloyd Parker, Pres., Omitte, votes Nov. 17 on \$482,000 bonds for improvements.

Tex., Cleburne—City Council approved and is offering for sale \$50,000 bridge, sewer equipment and general fund warrant refunding bonds.

Tex., Cuero—City votes December 1 on \$30,000 bonds for widening and extending streets.

Tex., Edinburg—Santa Maria Water Control and Improvement Dist., Cameron County, F. D. Shipley, Director, soon sell \$50,000 water bonds.

Tex., El Paso—El Paso County, E. B. McClintock, Judge, reported, votes in December on \$750,000 county hospital bonds.

Tex., Hallettsville—Lavaca County Road Dist. No. 1, care County Judge, rejected bids on \$60,000 bonds.

Tex., Honey Grove—City voted \$7000 school improvement bonds.

Tex., Pecos—Reeves County Road Dist. No. 1, M. J. McKellar, County Judge, opens bids Nov. 22 for \$75,000, 5% road bonds.

Tex., Presidio—Presidio Independent School Dist. voted \$60,000 bonds.

Tex., Rosenberg—City votes Nov. 26 on \$119,260 bonds; \$69,200, refunding; \$50,000, street improvement.

Tex., San Antonio—School Bd., reported, may issue \$3,000,000 San Antonio Independent School Dist. bonds.

Tex., Sinton—San Patricia County voted \$30,000 San Patricia County Drainage Dist. No. 3 bonds.

Va., Bloxom—Bloxom School Dist., Accomac County, voted \$60,000 bonds.

Va., Wise—Wise County Supvrs., J. W. Stewart, Chmn., opens bids Dec. 9 for \$400,000, 5% road bonds.

W. Va., Welch—Big Creek Dist. of McDowell County voted \$175,000 bonds for building high school.

W. Va., Wheeling—Ohio County defeated \$900,000 bonds for airport.

## Bond Issues Sold

Ark., Little Rock—State, Ralph Koonce, State Treas., sold \$4,850,000 bonds, including \$2,500,000 toll bridge, \$1,850,000 state pension obligations and \$500,000 school bonds to syndicate composed of Halsey, Stuart & Co., Chatham Phenix Corp., E. H. Rollins & Sons, Eldredge & Co., A. B. Leach & Co., Inc., R. W. Presprich & Co., B. J. Van Ingen & Co and Darby & Co., all New York; Mercantile Commerce Co., St. Louis, Mo.; Commerce Trust Co., Kansas City, Mo.; Stifel, Nicolaus & Co., Inc., St. Louis; National Securities Co., and W. B. Worthen & Co., both Little Rock, at \$100.566.

Fla., Daytona Beach—City, Billie B. Baggett, Mayor, sold \$5000 refunding bonds to T. M. Treglown, Daytona Beach.

Ga., Vienna—City, E. C. Taylor, Clk., sold \$15,000, 5%, \$500 denom. bonds to Bell, Speas & Co., Atlanta; \$8000, sanitary sewerage system; \$7000, water works extension.

Ky., Southgate—Southgate School Dist., reported, sold \$23,000 bonds to Newport National Bank, Newport.

La., Alexandria—Red River, Atchafalaya and Bayou Boeuf Levee Bd. sold \$188,000 bonds for constructing flood gates, Bayou Des Glazes, near Bordelonville, to J. P. Desing, New Orleans, at par and accrued interest.

La., Convent—St. James Parish School Dist. No. 1 sold \$300,000, 5% bonds to Caldwell & Co., Nashville, at 100.275.

La., Jonesboro—Chatham Consolidated School Dist. No. 15, Jackson Parish, Paul F. Stinson, Pres., sold \$40,000, 6%, \$1000 denom. bonds to Lachian M. Vass & Co., New Orleans, at par, accrued interest and \$40 premium.

Miss., Jackson—State, Theodore G. Bilbo, Governor, sold \$500,000, 3%, \$5000 denom. short term notes jointly to First National Bank, Jackson, and Hibernia Securities Co., Inc., New Orleans, La., at \$250 premium.

Mo., Richland—City recently sold \$50,000 water bonds to Whitaker & Co., St. Louis.

Okla., Guthrie—C. Edgar Honnold, Oklahoma City, purchased \$270,000 bonds: \$225,000, gas plant; \$45,000, fire station.

Okla., Mangum—City, H. T. Lawrence, City Mgr., sold \$108,000 water works bonds to Brown-Crummer Investment Co., Wichita, Kans.

Okla., Tecumseh—Pottawatomie County School Dist. No. 3 sold \$6800 bonds to R. J. Edwards, Inc., Oklahoma City.

Tenn., Chattanooga—City sold \$49,600 bonds to First Securities Co. at \$1700.93 premium; includes two sidewalk assessment issues and paving issue.

Tex., Hempstead—Waller County School Dist., S. M. Morris, Sec., Bd. of Education, sold \$7000, 5% bonds to State Bd. of Education, Austin.

Tex., Levelland—Sundown School Dist., reported, sold \$25,000 bonds to State Bd. of Education, Austin.

Tex., Sweetwater—City sold \$50,000, 5%, \$1000 denom. street improvement bonds to Dallas Bank & Trust Co., Dallas, at par.

Tex., Taylor—City, A. V. Hyde, City Mgr., sold \$100,000, 5%, \$1000 denom. sewer bonds jointly to Mercantile Securities Corp., Dallas, and Bosworth, Chanute, Loughbridge & Co., Denver, Colo., at 100.465.

## New Financial Corporations

Mo., Kansas City—Tri-State Investment Corp., capital \$112,198, chartered; John A. Butler, 57th St. Terrace and Penn St.

Mo., St. Louis—Colonial Securities, Inc., capital \$10,000, chartered; J. B. Killiam, 3115 Neosho St.

S. C., Columbia—State Agricultural Credit Corp., capital \$200,000, chartered; William Barnwell, Pres., 1200 Bull St.; F. W. Scheper, Jr., Treas.

Tex., Eastland—Eastland National Bank, J. B. Steele, Correspondent, capital \$50,000, applied to Treasury Dept., Office of Comptroller of Currency, Washington, for permission to organize.

Tex., Westhoff—H. O. Fertsch, Westhoff, Irvin M. Brewer, Slaton, and others establish bank with \$20,000 capital.

Va., Brookneal—Bank of Brookneal, capital \$25,000, chartered; E. F. Haley, Pres.; J. Tanner Kinnier and W. T. MacLead, V.-Pres., all Lynchburg.

Arlington Trust Co., J. E. Fowler, Pres., concluded negotiations to assume all deposits of Trust Co. of Northern Virginia, R. C. Lewis, Pres., both Rosslyn, Va.

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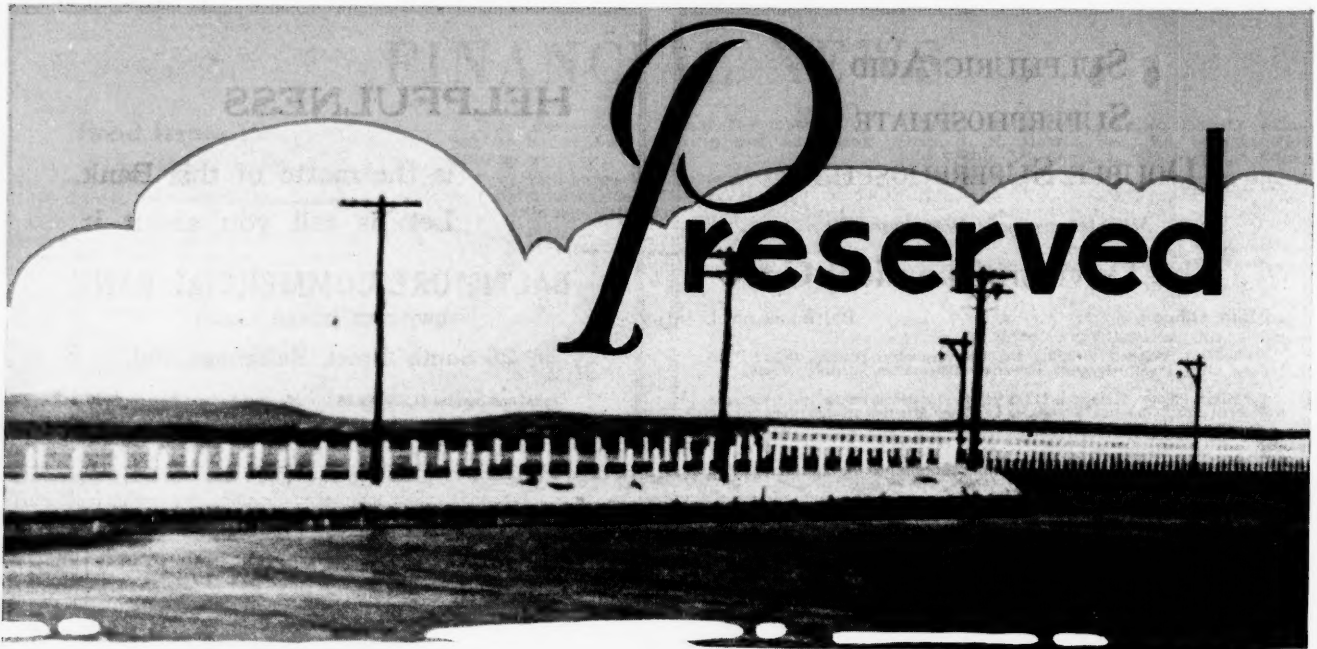
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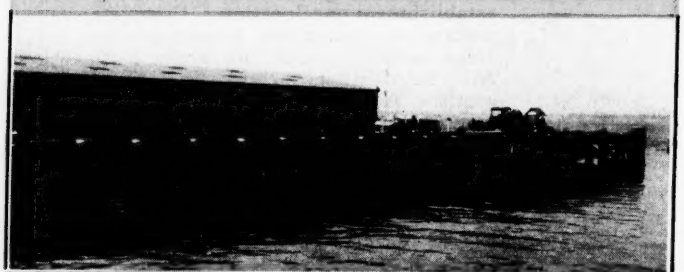
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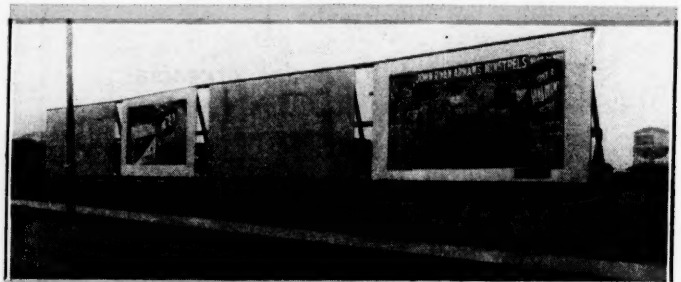
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Carolina Creosoted Ties in tracks of Southern Railway.



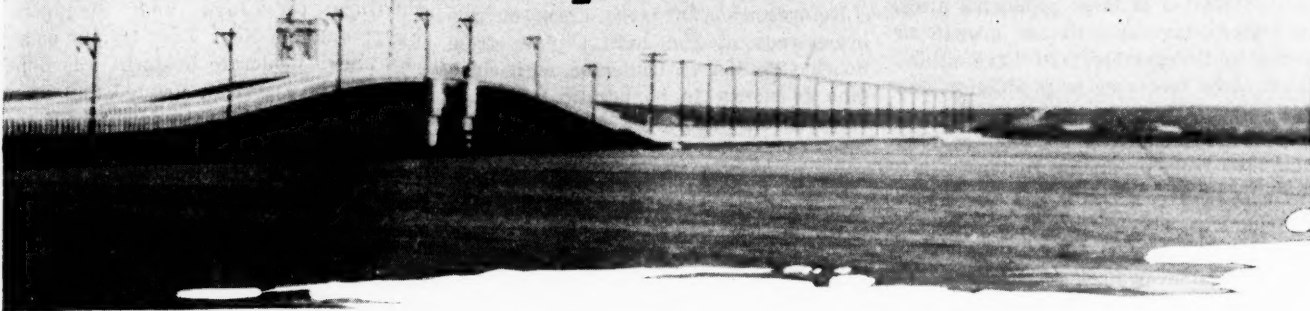
U. S. Customs House dock built of Carolina Creosoted Timbers and Piling.



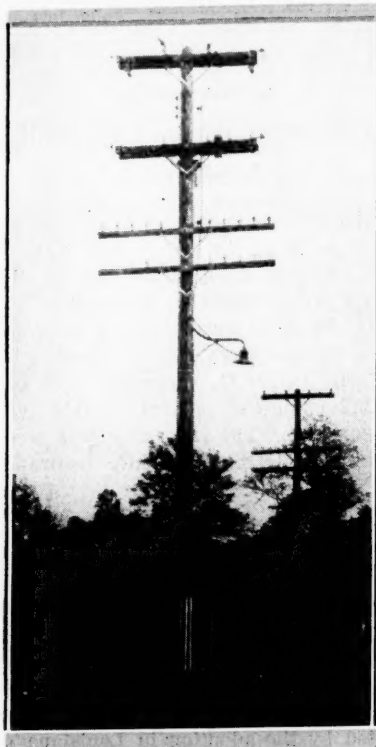
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—Fifteenth report of Subcommittee on Retail Distribution of Treated Lumber of the National Committee on Wood Utilization.

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### Railroads Develop Markets

Rapid and efficient rail transportation in the United States has been an important factor in recent years in the development of the fresh fruit and vegetable industry, declares the Bureau of Railway Economics, after study of the origin and distribution of 18 principal fresh fruits and vegetables unloaded at 66 large consuming markets in 1929. This transportation is said to have aided in the location of large producing areas in regions favorable to the growth of fruits and vegetables; to have stimulated large increases in production and assisted in the expansion of markets which are frequently situated at long distances from producing regions.

Domestic fresh fruits and vegetables unloaded in the 66 markets in 1929 aggregated 615,387 carloads, an increase of 3.2 per cent over 1928, and 5.3 per cent over 1927. Florida furnished 87 per cent of the total grapefruit; 37 per cent of the celery, and 28 per cent of the tomatoes. Other Southern figures were: Georgia, 42 per cent of the watermelons and 27 per cent of the peaches; Louisiana, 17 per cent of the strawberries; Texas, 22 per cent of the onions; Virginia, 29 per cent of the sweet potatoes.

New York City constituted the largest market, taking 130,702 cars, or over 21 per cent of the total, followed by Chicago, Philadelphia, Boston, Detroit, Pittsburgh, Cleveland, St. Louis and Los Angeles.

### Rayon Industry Growing

Total shipments or deliveries of rayon by manufacturers in 1929 amounted to 116,492,554 pounds, valued at \$140,811,345, according to a preliminary census report issued by the Bureau of the Census. These figures show an increase of 54.2 per cent in quantity and 32.3 per cent in value when compared with the 75,555,439 pounds of rayon valued at \$106,468,752 produced in 1927. Products allied to rayon (sheets, straw, horsehair, etc.) showed an increase of 147.5 per cent, the 1929 production being valued at \$8,465,142, and that for 1927 at \$3,419,584.

Establishments engaged wholly or principally in the manufacture of rayon yarn and allied products increased from 19 to 28 between 1927 and 1929. The 28 manufacturers employed 38,928 wage earners and paid \$44,704,134 in wages, as compared with 26,341 wage earners employed and \$28,649,441 in wages paid by the 19 manufacturers reporting in 1927.

A total of \$33,291,359 was paid by this group of manufacturers in 1929 for materials, containers for products, fuel and purchased electric current, this being an

increase of 29.3 per cent over the \$25,747,792 paid by similar plants in 1927. The value added by manufacture; that is, value of products less cost of materials, containers, fuel and purchased electric current, totaled \$115,985,128, an increase of 37.8 per cent over the \$84,140,544 reported for 1927.

### Slash Pine Profitable Crop

Reforestation of large areas of cut-over lands of the coastal plain from South Carolina to Louisiana with slash pine is shown to be practical through research conducted by Clemson Agricultural College of South Carolina and the Federal Forest Service. Slash pine stands are said to have yielded up to \$5 an acre annually for several years, with saw logs, the most valuable timber crop, still to be harvested.

Trees 13 years old, on wet lands or old fields, have been found frequently to attain a diameter of five to seven inches, and a height of 38 feet. Slash pine, which grows faster in its first 20 years than loblolly, yields turpentine gum and can be interplanted with longleaf or sown on wet cut-over lands or wornout fields. A report on practices in seeding and planting this timber crop, issued by the experiment station at Clemson College, describes broadcasting seed on grass, planting seed on tops of furrows and pressing it down, and setting out young seedlings from "wild" stands or from the nursery.

Good seed is said to be easy to obtain, at a maximum of \$5 to \$7 a pound, and a pound to a pound and a half per acre is required for broadcasting. This practice, it is found, is about as cheap and more satisfactory than the planting of one-year-old seedlings. State foresters in several Southern States have slash pine stock for distribution, and late winter or early spring is recommended as planting time.

A report on the studies of slash pine has been published by the Agricultural Station at Clemson. "Slash Pine for Reforestation in the Coastal Plain," and a bulletin, "Slash Pine," may be obtained from the Department of Agriculture at Washington.

### Ask Louisiana Capitol Bids

Baton Rouge, La.—Bids will be opened December 10 by Gov. Huey P. Long, Chairman of the Capitol Building Committee, for erecting the 33-story State Capitol on the old campus of the Louisiana State University here. Bonds in the amount of \$5,000,000 were recently authorized to finance this project.

Weiss, Dreyfous & Seiforth, New Orleans, are the architects.

### British Textile Outlook Improved

British spinners report an increasing demand for yarn spun from American cotton with quotations becoming firmer during October, according to the Department of Commerce. The section using Egyptian cotton, however, continued to suffer from over-production. The trade reported large inquiries for cotton piece goods especially light-weight bleaching cloth for Karachi and Madras and white shirtings for Java and Singapore. Egypt and the Near East bought small lots and a moderate business was done with Latin America. Printed and dyed goods continued to be in demand for the Continent.

Lancashire cotton weavers, it is said, probably will accept the new wage scale whereby they may operate eight to ten looms with corresponding wage increases.

In the hosiery section most firms were reported to be working on a short-time basis but some improvement was noted during the month. Buying was largely on a restricted scale but heavier seasonal orders are anticipated.

The rayon yarn trade continued to improve during October but the possibility of further price reductions was causing some uncertainty.

### \$1,000,000 Insurance for Mill Workers

Winston-Salem, N. C.—Arrangements have been made by the Hanes Hosiery Mills Co. for group insurance in the amount of \$1,000,000 for employees of the plant. Slightly more than 98 per cent of the workers have signed, according to president James G. Hanes, or 1096 out of 1113 employees entitled to this type of insurance. The insurance was written by the Metropolitan Life Insurance Co., New York.

### New Sugar Cane Variety

Federal scientists are described as enthusiastic over the breeding and development of a new variety of sugar cane which bids fair to further increase yields of sugar, already greatly augmented by the adoption in Louisiana of varieties imported and distributed by the United States Department of Agriculture several years ago. The first release of the new variety, which is now known as C. P. 807, was in the 1930 season, but the sugar experts have watched experimental plantings for several years, and base their expectations on results of these tests, in which C. P. 807 outyielded the best of the competing varieties by nearly a ton of sugar per acre, or by more than 35 per cent, states an announcement.

## Arts and Crafts in the Southern Appalachians

By R. CARL MOORE, Micaville, N. C.

Probably no territory in the United States is better known for its native arts and crafts than the Southern Appalachians, particularly the Western North Carolina region. Not only do these crafts produce articles of fine workmanship, but they employ a large number of people even when measured by present-day mass production standards. They furnish perhaps the best picture in the country today of arts as they existed in Colonial times. These arts have survived for two reasons: The excellence of the articles produced, and the fact that the mountains until comparatively recently were almost isolated from the rest of the country, enabling the mountain dwellers to develop the crafts to a high degree.

There are a variety of smaller handicrafts but the three main divisions are metalwork, handmade pottery and hooked rugs. All these industries are very old and nowhere is age more apparent than in the handmade pottery industry which dates from the time of the Revolution. At least one small pottery has been in operation for a hundred years, and some families can boast of five generations of active potters. In the process of manufacture the ware is turned on old-fashioned wheels operated by foot-power, set aside to dry, fired in kilns, and then, in the case of ornamental pottery, glazed and refired. Among the products are vases, bowls, jars, and jugs of many types and sizes, table articles, garden ornaments and art novelties.

This particular industry has survived in North Carolina partly because of abundance of natural resources. Besides deposits of potter's clay, most of the residual kaolin and over half the feldspar produced in the United States comes annually from Western North Carolina.

Perhaps the most famous mountain art is that of the metalworker, which dates from pre-Revolutionary times. Some of the best shops are now run by operators who are direct descendants of famous frontiersmen. Practically any type of metal work, including intricate and artistic designs, is turned out by hand in these shops. Andiron sets, floor lamp stands, wall brackets and other articles are manufactured with great skill. Even an intricate braidwork of iron is made on many articles. Some of the best ironwork is handcolored or is furnished in a choice of finishes. From the mountains it is shipped all

over the country and even to foreign lands.

The hooked rug industry employs more operators than any other native craft, using both men and women. It is segregated chiefly in certain communities, although it has been gaining steadily in prominence to such an extent that classes are now maintained where women are taught the art. Many present operators have spent a lifetime at the art and many designs have been handed down directly from Colonial times. Rugs are made in various shapes and sizes and in a great variety of colors. Some of the best require months of painstaking workmanship and are very valuable.

### Mississippi Transmission Corporation

Jackson, Miss.—Articles of incorporation of the Mississippi Transmission Corporation, to distribute natural gas and electricity in the state, have been approved by the Governor, Attorney General and Secretary of State, and the charter issued. Capitalization of the new company was not set forth, the charter, however, providing for the issuance of 25,000 shares of common stock at a price to be fixed from time to time by the board of directors. Incorporators include: L. B. Howard and Stutson Smith, Nashville, Tenn.; John B. Mallers, Chicago, and W. H. Wilkes, St. Louis. The articles were filed by W. D. Alexander, Boyle, Miss.

### New Apartment Building

Plans announced by Thomas Mullan, Baltimore builder, provide for a \$1,000,000 apartment project at the southeast corner of Thirty-ninth Street and Canterbury Road. The building, to be 11 stories high and 180 by 100 feet, will contain 127 suites, most of which will be housekeeping apartments ranging from one room, kitchen and bath to five rooms, kitchen and two baths.

In the rear of the building a two-story underground garage will contain accommodations for 140 automobiles. Roof of this garage will be utilized for flower beds, tennis court and children's playground.

Completion of the structure is expected by July, 1931. Louis T. Rouleau, Washington, is the architect.

### \$14,000,000 Construction Under Way at Nashville

Nashville, Tenn.—A survey in Nashville and suburban territory indicates that new construction will approximate \$14,000,000 for 1930. Projects completed or under way are estimated to cost more than \$7,000,000, while a new unit to the plant of the du Pont company at Old Hickory will cost \$3,500,000 and buildings definitely planned for early construction are estimated to cost \$1,700,000. As these figures do not take into consideration the construction of dwellings and miscellaneous buildings in the suburban territory and buildings for which permits are yet to be issued in Nashville, it is estimated that the total will easily exceed \$14,000,000. Some of the more important projects completed this year or under way include: Meharry Medical College school and hospital, \$1,500,000; Fisk University library, \$300,000; Cain-Sloan & Co., remodel store, \$300,000; Seventh Avenue garage, \$500,000; Union Bus Terminal, \$180,000; Firestone service stores, \$200,000; Cumberland River Sand Co. plant addition, \$175,000; Neuhoof Packing Co. extension, \$100,000; Jarman Shoe Co. building, \$60,000; Publix Theatre, \$250,000; Montgomery Ward building \$245,000; Sterchi Bros. building, \$105,000; David Lipscomb School dormitories, \$212,000; Pittsburgh Plate Glass Co. warehouse, \$40,000; penitentiary cell house, \$80,000; power house expansion of Nashville Railway & Light Co., \$1,115,000, and municipal projects, \$1,600,000. Buildings planned for early construction include the Capitol Theater to cost \$1,500,000 and Fisk University chemical building to cost \$200,000.

### \$575,000 Medical Building

Richmond, Va.—Plans have been completed by Lee, Smith & Vandervoort, local architects, for an 11-story medical building here to cost \$575,000. The structure, to be erected by the Medical Science Corp., will be on property of J. Luther Moon on West Franklin street, near the Mayo Memorial Building, with a frontage of 104 feet. It will be of American architecture, of the set-back type, faced to the third story with Indiana lime stone, above which will be buff colored brick and stone trimming on the parapet.

Water Improvement District No. 13 of Hidalgo County, A. W. Cameron, country judge, Edinburg, Tex., plans to sell \$1,500,000 of bonds for construction of a drainage system, including canals and other facilities.





# PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS



Bids close November 25, 1930.

U. S. Engineer Office, Rock Island, Illinois.—Sealed bids, in duplicate subject to the conditions contained herein, will be received until 3:00 P. M., November 25, 1930, and then publicly opened, for furnishing all labor and materials and performing all work for constructing and delivering ten 110'x24'x5' steel material barges. Further information on application.

Bids close December 10, 1930.

War Department, Office Constructing Quartermaster, Fort Bragg, N. C. Sealed proposals, in triplicate will be received until 10:00 A. M., December 10, 1930, and then publicly opened, for the construction and completion of Nurses' Quarters, at Fort Bragg, North Carolina. \$15.00 deposit certified check payable to Treasurer of United States required for plans and specifications. A certified check or Bid Bond in the amount of \$6,000.00 will be required with each proposal. Further information on request.

Bids close December 2, 1930.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., November 3, 1930.—SEALED BIDS will be opened in this office at 3 p. m., December 2, 1930, for the extension and remodeling (except elevator) of the U. S. post office, etc., at Portsmouth, Va. Drawings and specifications, not exceeding six sets, may be obtained at this office, in the discretion of the supervising architect, by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. JAS. A. WETMORE, Acting Supervising Architect.

Bids close December 8, 1930.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., November 8, 1930.—Sealed Bids will be opened in this office at 3 p. m., December 8, 1930, for the construction of the United States post office at Kosciusko, Miss. Drawings and specifications, not exceeding six sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made from each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. JAS. A. WETMORE, Acting Supervising Architect.

Bids close November 26, 1930.

Sealed Bids, indorsed "Bids for Switchboard, Specification No. 6284," will be received at the Bureau of Yards and Docks, Navy Department, Washington, D. C., until 11 o'clock a. m., November 26, 1930, and then there publicly opened, for 10 K. W. exciter, conduits, cables, potheads, and a switchboard, installed at the Marine Barracks, Parris Island, S. C. Specification No. 6284 and accompanying drawing may be obtained on application to the Bureau or to the Commanding General, Marine Barracks, Parris Island, S. C. Deposit of a check or postal money order for \$10, payable to the Chief of the Bureau of Yards and Docks, is required as security for the safe return of the drawing and specification. A. L. PARSONS, Chief of Bureau, October 30, 1930.

Bids close December 9, 1930.

## Bids on Bonds Solicited

Wise, Va. At the Courthouse thereof on the 9th day of December, 1930, The Board of Supervisors will refund 400 one thousand dollar 1911, Wise County Road Bonds, bearing 5% interest. These bonds will be issued at 4 1/2%, and will be serial bonds, will be dated February 1, 1931, payable as follows: \$10,000 each year beginning Feb. 1, 1934, until Feb. 1, 1937; and \$15,000 each year beginning Feb. 1st, 1938, until Feb. 1, 1957; and \$20,000 each year thereafter until paid, or some other form of serial maturities. Bids will be by auction. Interest will be paid semi-annually. Those bonds will be refunded under section No. 2735 of the Code of Virginia. This Board reserves the right to reject any and all bids.

BOARD OF SUPERVISORS, WISE COUNTY, VA.,  
By J. W. Stewart, Chairman.

## GENERAL INFORMATION

### About Proposal Advertising in Manufacturers Record

PUBLICATION DAY: Thursday.  
FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible.

### THE DAILY CONSTRUCTION BULLETIN OF THE MANUFACTURERS RECORD

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

Bids close November 25, 1930.

## Louisiana Highway and Bridge Work

Baton Rouge, La.

Sealed Proposals for the construction of the following Projects will be received by the Louisiana Highway Commission, Room No. 608, Louisiana National Bank Building, Baton Rouge, Louisiana, until 11:00 o'clock A. M. on Tuesday, November 25th, 1930. Proposals will not be received after this hour. At 11:15 o'clock A. M. of the same day and date, they will be publicly opened and read in the Chamber of House of Representatives in the State Capitol Building.

PROJECT NO. 5103—Crew Lake-Rayville Highway. Located in Richland Parish. Route No. 4. Length 5.5 miles. Width 18 feet. Type Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$1.50. Readvertisement.

PROJECT NO. 3601-A—Baton Rouge-New Orleans (Air Line) Highway. Located in St. John the Baptist and St. Charles Parishes. Length 14.8 miles. This work will consist of constructing the embankment and 20 foot concrete pavement between St. James-St. John Parish line and the proposed Spillway. Charges for plans \$4.00. Readvertisement.

PROJECT NO. 2550 — Mansfield-Grand Cane Highway. Located in DeSoto Parish. Route No. 1. Length 7.6 miles. Width 18 feet. Type Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.00.

PROJECT NO. 4150—Denham Springs-Doyle Highway. Located in Livingston Parish. Route No. 7. Length 12.8 miles. Width 18 feet. Type Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$3.00.

PROJECT NO. 5003—Lockwood-Ninotch Highway. Located in Red River, Bienville and Bossier Parishes. Rt. No. 10. Length 9.7 miles. Width 18 feet. Type Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

PROJECT NO. 2750—Lake Providence-Transylvania Highway. Located in East Carroll Parish. Route No. 3. Length 11.0 miles. Width 18 feet. Type Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

PROJECT NO. 3804 — HOUMA-RACE-LAND Highway. Located in Terrebonne and Lafourche Parishes. Route No. 2. Length 11.1 miles. Width 18 feet. Type Portland Cement Concrete Pavement and

other work in connection therewith. Charges for plans \$3.00. Readvertisement.

PROJECT NO. 4400—Natchitoches-Grand Ecure Highway. Located in Natchitoches Parish. Route No. 2. Length 3.572 miles. Width 18 feet. Type Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$1.50.

PROJECT NO. 539-A — Williana-Packton Highway. Located in Grant and Winn Parishes. Route No. 99. Length 9.4 miles. Width 18 feet. Type Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

PROJECT NO. 4403 — LUELLA - ST. MAURICE Highway. Located in Natchitoches and Winn Parishes. Route No. 1. Length 1.8 miles. Type Portland Cement Concrete Pavement and other work in connection therewith, including bridge over Saline Bayou. Charges for plans \$1.00.

PROJECT NO. 2651—SCOTLAND-LIND-SAY Highway. Located in East Baton Rouge Parish. Route No. 3. Length 6.7 miles. Width 18 feet. Type Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$1.50.

PROJECT NO. 2050—COLUMBIA-COREY Highway. Located in Caldwell Parish. Route No. 14. Length 7.2 miles. Width 18 feet. Type Portland Cement Concrete Pavement and other work in connection therewith. Charge for plans \$2.00.

PROJECT NO. 750-A—PACKTON-WINN-FIELD Highway. Located in Winn Parish. Route No. 99. Length 10.5 miles. Width 18 feet. Type Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

PROJECT NO. 4503—Readvertisement. Chef Menteur Highway. Located in Orleans Parish. Route No. 2. Length 2.0 miles. The work will consist of the construction by hydraulic dredge, of an embankment with 60 feet crown on the West end of the Chef Menteur Bridge. Charges for plans \$1.00.

PROJECT 446-B—BAYOU BARATARIA BRIDGE GRETNA-LAFITTE HIGHWAY. Located in Jefferson Parish. Route No. 30. Description 1—200 ft. Swing Span; reinforced concrete piers on timber pile; 100 lineal feet combination steel concrete-timber trestle. Charges for plans \$2.00.

PROJECT NO. 673-C—Seven Bridges, Calcasieu River, Kinder-Leblanc Hwy. Located in Allen Parish. Route No. 7. Description 1—200 ft. fixed span; reinforced concrete piers on timber piles; 240 lineal feet combination steel. Concrete timber trestle. Charges for plans \$2.00.

PROJECT NO. 538-D—Six Bridges, Fulton-DeQuincy Highway. Located in Beauregard Parish. Route No. 7. Description 2—60 ft. low trusses; reinforced concrete piers on timber piles; 620 lineal feet combination steel. Concrete-timber trestle. Charges for plans \$2.00.

PROJECT NO. 186-B — Bayou Louis Bridge, Harrisonburg-Sicily Island Highway. Located in Catahoula Parish. Route No. 18. Description 4—100 ft. low truss spans; reinforced concrete piers on timber piles; 180 lineal feet combination, steel-concrete-timber approach trestle. Charges for plans \$2.00.

PROJECT NO. 180-C — Bayou-Macon Bridge, Winnboro-St. Joseph Highway. Located in Franklin Parish. Route No. 48. Description 1—160 ft. Swing Span; reinforced concrete piers on timber piles; 160 lin. feet. Combination steel-concrete-timber approach trestle. Charges for plans \$2.00.

PROJECT NO. 180-D — Tensas-River Bridge, Winnboro-St. Joseph Highway. Located in Franklin and Tensas Parishes. Route No. 48. Description: 160 ft. Swing Span, 2—120 ft. fixed spans; reinforced concrete piers on timber piles; 60 lineal ft. Combination steel-concrete-timber approach trestle. Charges for plans \$2.

Full information and proposal forms are available at the offices of the Highway Commission at Baton Rouge. Plans and specifications may be inspected there or will be furnished upon payment of amounts specified above (Not to be refunded).

HARRY B. HENDERLITE,  
State Highway Engineer.  
O. K. ALLEN, Chairman,  
Louisiana Highway Commission.

Bids close December 3, 1930.

U. S. ENGINEER OFFICE, First New Orleans District, New Orleans, La. SEALED BIDS, in duplicate, will be received until 2 P. M., December 3, 1930, and then publicly opened, for furnishing all labor and materials and performing all work for the construction of a railway swing bridge across the site of the Louisiana-Texas Intracoastal Waterway on the Bayou Sale branch of the Texas and New Orleans Railroad Company near North Bend, La. Further information furnished on application.

Bids close November 24, 1930.

### Excavation for Drainage

Birmingham, Ala.

Sealed proposals will be received by the undersigned until ten o'clock A. M. Monday, November 24, 1930, for certain earth and rock excavation which is proposed to be done by the City of Birmingham on Section Eight of Village Creek drainage project (from the West line of the Southeast Quarter of Section 17, Township 17 South, Range 2 West, to 75th Street North).

The approximate principal quantities being as follows: 50,150 Cu. Yds. Earth Excavation; 24,200 Cu. Yds. Rock Excavation and 500 Sq. Yds. Rip-Rap Masonry.

Specifications may be obtained and plans examined at this office. The right is reserved to reject any or all proposals.

A. J. HAWKINS,

City Engineer.

Bids close November 14, 1930.

### Bridge

STATE OF MARYLAND  
STATE ROADS COMMISSION

### NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building bridge as follows:

Baltimore County, Contract No. B-161-43—Single span reinforced concrete girder bridge and approaches at the North end of the Cockeysville Grade Elimination on the York Road over Beaver Dam Run

will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M. on the 14th day of November, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 31st day of October, 1930.

G. CLINTON UHL, Chairman.

L. H. STEUART, Secretary.

Bids close December 17, 1930.

### Notice for Proposals on Utilities

Kings Mountain, N. C.

Sealed proposals will be received by the City of Kings Mountain, North Carolina, at Eleven (11:00) o'clock A. M. on December 17th, 1930, at the office of the City Clerk for the purchase of Electric and Water Systems now owned and operated by that city.

Should an acceptable proposal be received, this will be submitted to the voters for ratification.

A certified check in an amount of not less than Five Thousand (\$5,000.00) Dollars is required, and the right is reserved to reject any or all proposals.

HON. WILEY H. MCGINNIS, Mayor.

Further information may be obtained from the undersigned:

UTILITIES ENGINEERING & MANAGEMENT COMPANY,

917 Johnston Bldg.,

Charlotte, N. C.

## CLASSIFIED OPPORTUNITIES

### MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

TO LEASE—240 A. in Southeastern Okla. for mineral development. Large adjacent tract available, with price, location and combination of natural agencies that merit investigation. Facts given on request.

F. D. McCALL, Frisco City, Ala.

### MANGANESE DEPOSIT

FOR SALE ONLY—Rich manganese deposits in Ala. near Birmingham.

THE MIDVALE MINING & DEVELOPMENT CO.,

W. H. Amerine, Secretary,  
Box 1121, Montgomery, Alabama.

### TIMBER AND TIMBER LAND

FOR SALE—5 million feet saw timber, poplar, oak, gum, pine. None over 1½ miles from railroad station. T. W. McAllister, Buena Vista, Ga.

WE HAVE exclusive sales privilege for more than 500,000 acres of Florida land at sacrifice prices. Also large areas in Georgia and South Carolina. Desirable second growth pine lands; agricultural lands adapted to tung oil and citrus crops, grazing lands, etc. To share in the assured future of Florida and the South INVESTIGATE NOW. THE JAMES D. LACEY COMPANY, 1409 Barnett Bldg., Jacksonville, Fla.

### FARM, FRUIT AND TRUCK LANDS

#### FLORIDA

#### GROVE OPPORTUNITY

63 ACRES mixed grove, avocados, mangos, grapefruit, oranges, many novel miscellaneous fruits, 175 acres raw land additional. Among choicest properties in Redlands. Three houses on property. If you have \$35,000 you can buy the best grove investment ever offered in Dade County.

CHARLES I. BROOKS,

2272 S. W. 11th Terrace, Miami, Fla.

50 ACRES in grove, about ¼ orange and ½ grapefruit. Oranges are about ½ Valencias and ½ Pineapple. Trees range in age from 6 to 20 years. 50 acres cleared and fenced. 50 acres uncleared. Land has double Orange River frontage of about ½ mile. Improvements consist of artesian well, tenant house, storage warehouse and barn. Seven miles from court house, 1 mile from highway. Price \$40,000.00. Terms.

P. JOHN HART REALTY CORP.,

P. O. Arcade,  
Fort Myers, Fla.

### Rates, Terms and Conditions

RATES: 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to line. When the advertisement contains a number of long words proper allowance should be made.

#### Rates for Special Contract:

100 lines 28c a line

300 lines 26c a line

500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, postoffice or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

### FARM, FRUIT AND TRUCK LANDS

#### GEORGIA

FOR SALE—3,300 acres finest farm land in State of Georgia. 85% cultivable; 50% now in cultivation. First class general farming or dairying proposition; or ideal for manufacturing site. Railroad and public highways running through lands with station about center of tract. Large brick and concrete warehouses and barn with adjacent side-tracks. Brick commissary and dwelling; good tenant houses; telephone; electricity and artesian water. Ideal climate; near good churches and schools. Best references as to going, high class proposition. Sell for part cash, balance terms. Address 9060 care of Manufacturers Record.

#### LOUISIANA

ST. CHARLES PARISH, LOUISIANA, offers opportunities in cattle ranches, agricultural and industrial sites. St. Charles Bank & Trust Co., Sellers, La.

#### TEXAS

LOWER RIO GRANDE Valley orchards and acreage at actual value. Owner's price direct to you. Send for list. ROBERTS REALTY CO., Realtors, McAllen, Tex.

### HUNTING PRESERVE

#### IDEAL VIRGINIA HUNTING PRESERVE AND FARM—1450 Acres.

700 acres woodland, balance farming land, pasture and meadows, watered by large creek and small streams. Attractive modern nine-room residence, three baths, steam heat and water system. Manager's house, several tenant settlements and stock barns.

Abundance of game, such as wild turkeys, quail, rabbits, squirrels and fur-bearing animals; some deer.

Located thirty miles from Lynchburg, seven miles from small town. Photographs, price and full details on request. Non-resident owner, anxious to sell.

GEO. V. VENABLE & CO.,  
Lynchburg, Virginia.

### BUSINESS OPPORTUNITIES

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill properties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 578 Enright, St. Louis, Mo.

A SURETY BOND, Bonded Trustee holding trust funds, will protect Profit Participating 8% preferred shares, of a patented machine manufacturing Co., so 75% can be withdrawn on 30 days' notice. The investments will be enterprise starting, with unusual employment and profit possibilities. Government records confirm practicability of invention for commercializing. For further protection facts, etc., address No. 9061, care Manufacturers Record.

### FINANCIAL

TEXAS—Investments offered in the great Southwest. Telephone, electric light, gas, water works, real estate, first mortgages. BOX 1929, AMARILLO, TEXAS.

A CONCERN that knows values and is well established wants to represent company that has money to loan. All loans to be secured by first mortgages in Oklahoma real estate. The best of bank reference furnished. Address VICTOR MEAD COMPANY, 819 N. Harvey St., Oklahoma City, Okla.



## TRANSLATIONS

COMMERCIAL and Manufacturers' translations, letters, advertising matter into and from French, German, Italian, Portuguese and Spanish. Letter rates 25c per 100 words into English, 35c per 100 words into other languages. F. M. ELLIS, Griffin, Ga.

## INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO.,  
Woolworth Building New York City

## INDUSTRIES WANTED

WELL-LOCATED Southern town wants industry. Will furnish plant, moving expenses, additional capital and other concessions.

INDUSTRIAL SERVICE CORP.,  
Asheville, N. C.

## INDUSTRIAL PLANTS

FOR SALE—Sash, door and millwork plant, ready to operate, well located, resident skilled labor. Liberal terms. Address No. 9057, care of Manufacturers Record.

## FACTORY AND WAREHOUSE SITES

FOR MANUFACTURING OR WAREHOUSE  
Corner Lot 99x340.

Well located on good street and extending back to tracks of three railroads. A special price to a quick buyer.

F. C. ABBOTT & CO.,  
201 Johnston Building,  
Charlotte, N. C.

33 years in Charlotte Real Estate.

## FACTORY SITES

TWO AND ONE-QUARTER MILES railroad frontage industrial sites for sale at Baton Rouge. Southern Land and Investment Company, Baton Rouge, La.

## FACTORY SITES

FOR SALE OR LEASE—INDUSTRIAL OR MANUFACTURING SITE.

Good Buildings: Iron Clad, 60' x 100'; 50' x 60'; 32' x 70'; Concrete Floors. Wood Frame, 45' x 100'; 34' x 70'; Wood Floors. Brick, 30' x 150'; Wood Floors. All equipped with Sprinkler System; 30 miles from Atlanta on Seaboard Railway. Owner 636 Orme Circle, N. E., Atlanta, Ga., or Industrial Agent, S. A. L. RWY. CO., Portsmouth, Va.

FACTORY SITE  
ON DEEP WATER

If you are seeking an ideal deep water industrial location in Baltimore, Maryland, on one of the finest harbors in the world, see advertisement on page 84, October 16th issue of the Manufacturers Record.

W. S. CAHILL CO.,  
Key Highway and Webster Street,  
Baltimore, Md.

## PATENT ATTORNEYS

PATENTS—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

FREE "PATENT PARTICULARS"  
Sterling Buck, over 23 years Registered Patent Attorney. Prompt and thorough services. Suite M 629 F, Washington, D. C.

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. PATENTS, TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 600-4, Barrister Building, Washington, D. C.

PATENTS—TRADEMARKS—COPYRIGHTS  
Charlotte office convenient to South. PAUL B. EATON, Registered Patent Attorney, 218 Johnson Building, Charlotte, N. C., and 314 McLachlen Building, Washington, D. C.

## SITUATIONS WANTED

CAPABLE reading and executing blue prints, estimate amounts, sales and equipment installation, experience. Reference. No objection travel. Address No. 9059, care Manufacturers Record, Baltimore, Md.

## REPRESENTATIVES WANTED

IF YOU HAVE a following among steam boiler operators and are not afraid to work you can make good money by selling our Boiler Compounds on commission basis. We make water analysis and guarantee results on our Water and Metal Treatments. Write for particulars.  
SOUTHERN PRODUCTS CORPORATION,  
New Orleans, La.

## MEN WANTED

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty years. Send only name and address for details.

R. W. BIXBY, INC.,  
103 Downtown Bldg. Buffalo, New York

## LUMBER

## FOR SALE

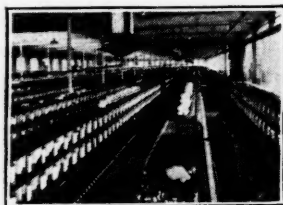
Large carload inch chestnut lumber, dry one year, large per cent f. a. s.  
SIGRIST BROS., Navarre, Ohio.

## MACHINERY AND SUPPLIES

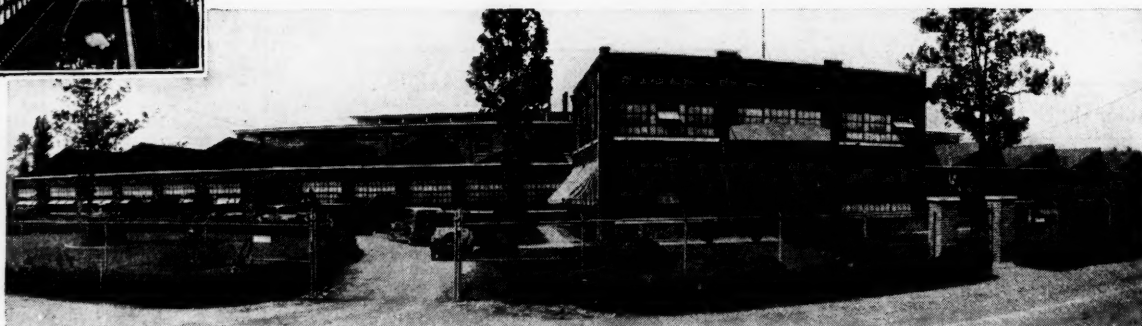
FOR SALE—Lambert 40 H.P. Electric, three-phase, 200 volts, 60 cycle, 570 speed, double drum, double winch hoist in A-1 condition; \$1000.00. ASHEVILLE WAREHOUSE CO., P. O. Box 981, Asheville, N. C.

TO SELL—Westinghouse D. C. Power Plant, 110 volts, with battery, 3 generators c! 1500 watts each. In good and smooth operating shape. Being removed because Power Co. energy available. Will sacrifice. Address H. J. PETTIT, Suffolk, Va.

## SPECIAL ADVERTISEMENTS OF GENERAL INTEREST



### FOR SALE COTTON MILL AT BIRMINGHAM, ALABAMA



30,000 ring spindle, capacity in print cloth 3,600,000 pounds per year, also makes broadcloth, sheeting and tobacco cloth. Original cost, including land, \$1,576,300.

Valued by J. E. Sirrine & Company, July 31, 1928, \$1,269,333.57. Property in fine physical condition. Labor conditions good.

Mill built in 1927. Located in industrial section. Street cars, northern light, water sprinkling system and fire protection. Cyclone

fenced. Can deliver this property at \$750,000.00. The whole setting of mill location, transportation, banking, financing, housing and many other features make this one of the most desirable mill properties in the entire South and is a bargain to a real mill man. Shipping conditions over nine railroads and Birmingham on the Warrior River insure good rates and prompt service.

(All machines individually motor driven)

J. B. LINDSAY - - - 201 Jackson Bldg. - - - BIRMINGHAM, ALA.



# RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



## BOILERS AT \$2.00 PER H. P.

Butt Strap, High Pressure, H. R. T. Boilers.

- 6—150 H.P. 150 lbs. steam pressure, Atlanta, Ga.
- 3—150 H.P. 150 lbs. steam pressure, Augusta, Ga.
- 3—150 H.P. 150 lbs. steam pressure, Americus, Ga.
- 6—150 H. P. 140 lbs. steam pressure, River Falls, Ala.
- 6—150 H.P. 130 lbs. steam pressure, Lake, Miss.

These boilers must be moved immediately. We guarantee insurance at above pressure.

**W. M. SMITH & CO.**  
Box 1709 Birmingham, Ala.

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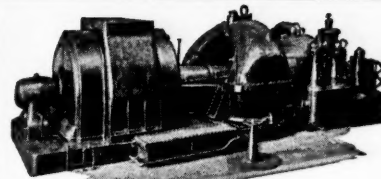
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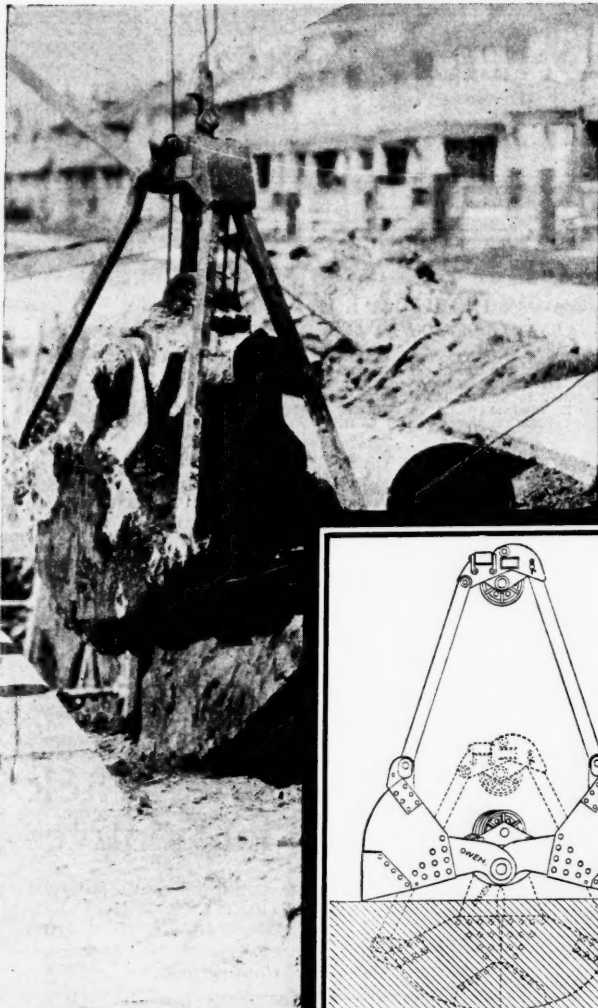
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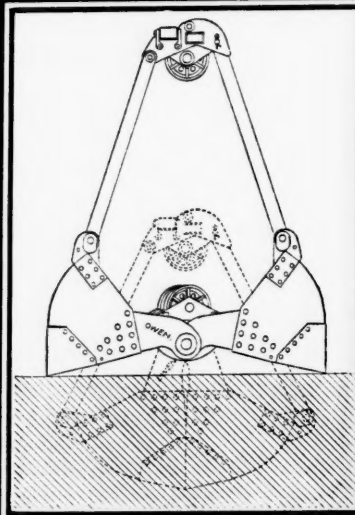
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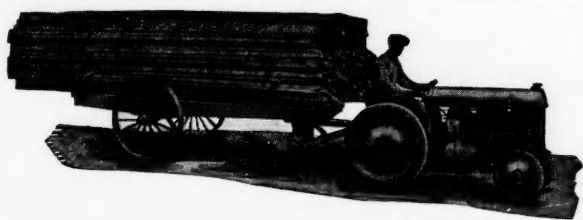


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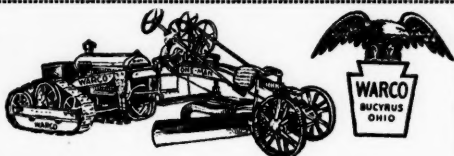
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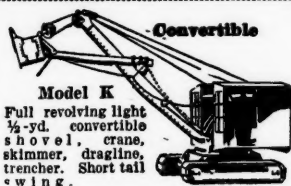
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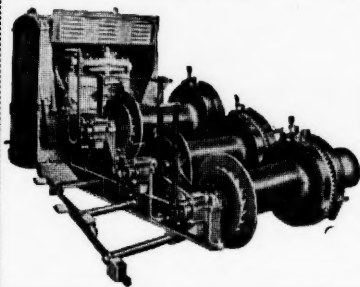


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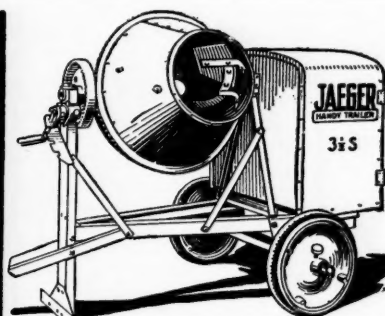
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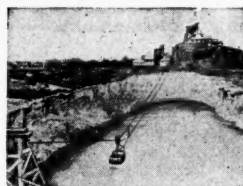
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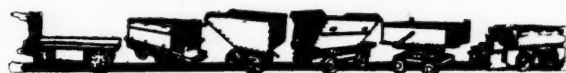
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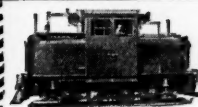
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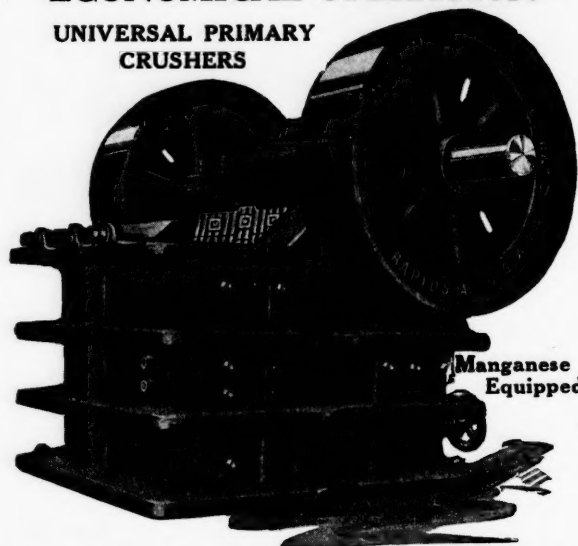
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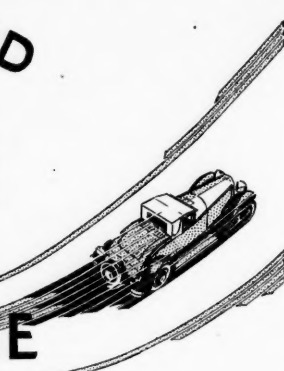
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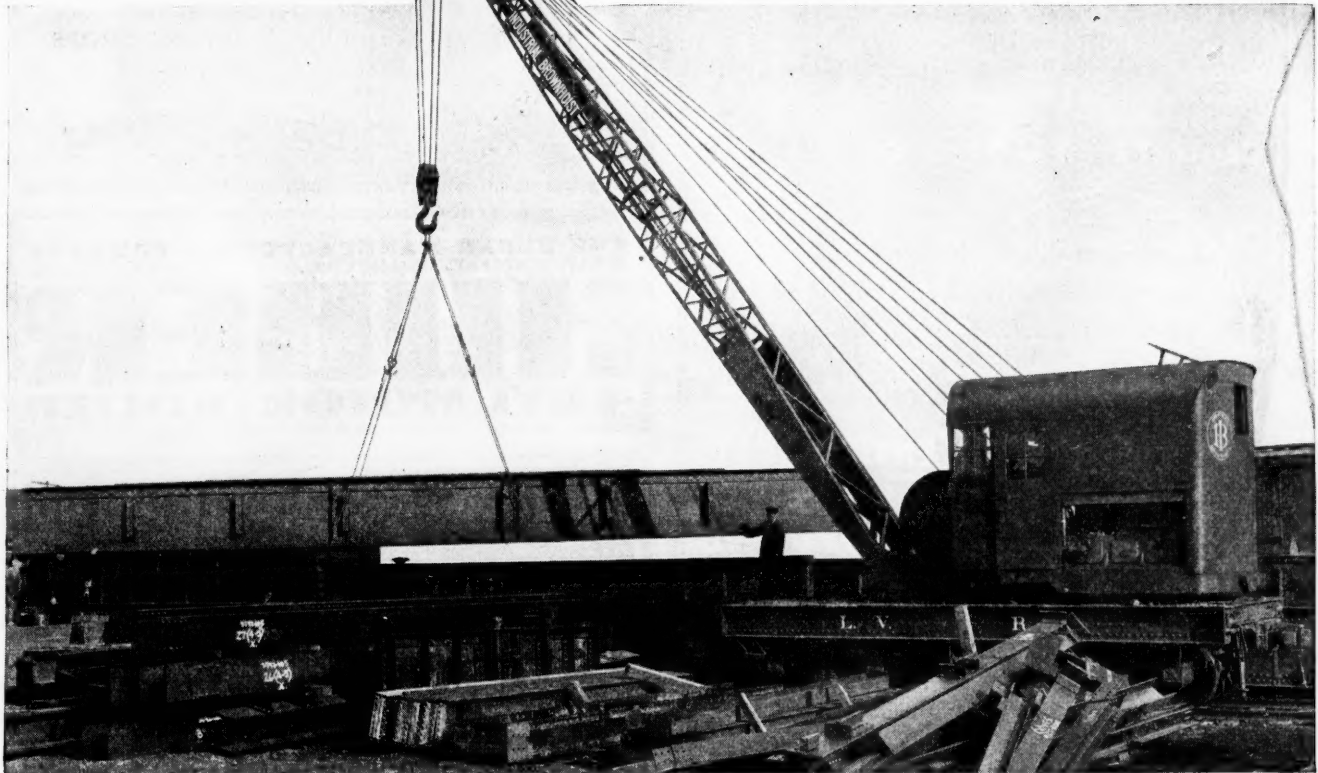
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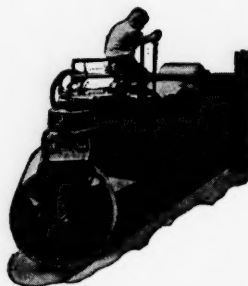
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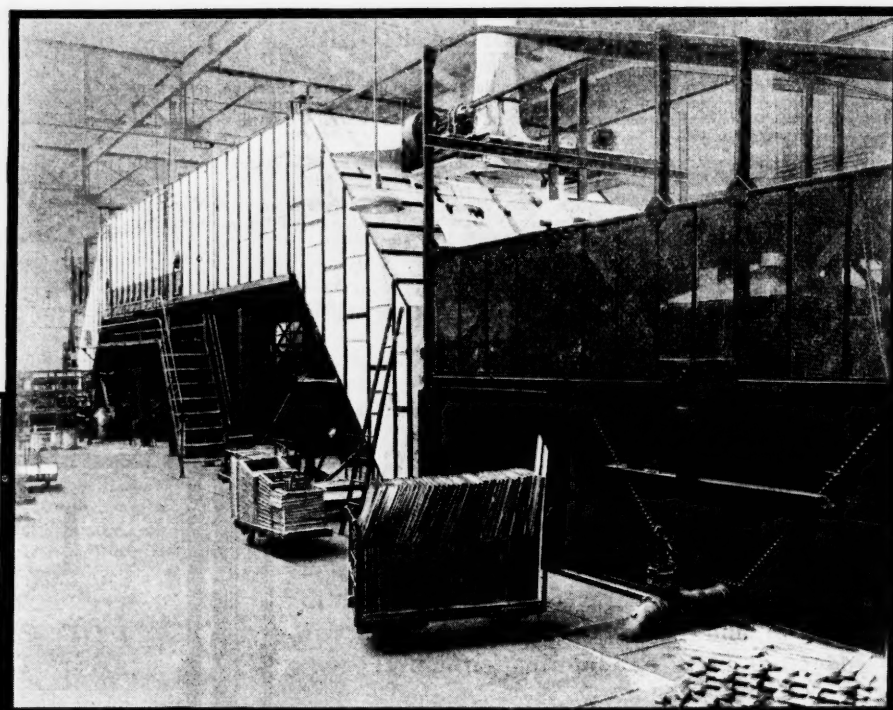
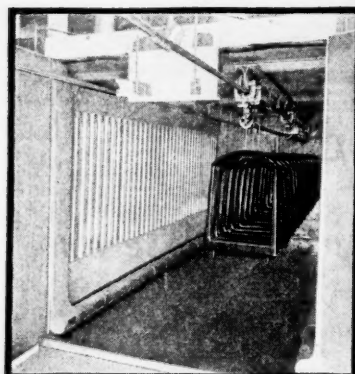
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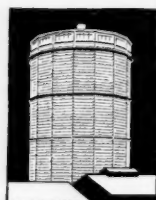


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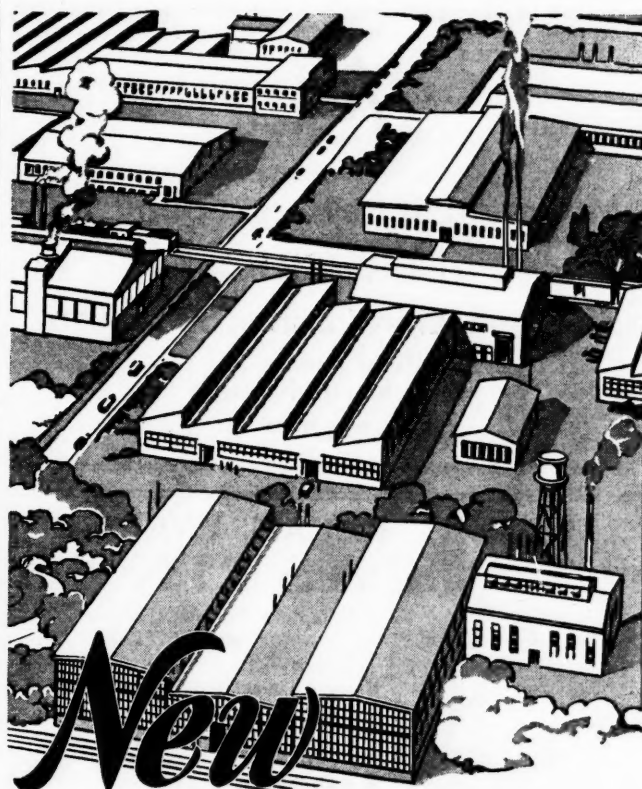
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Saville, Inc., Allen J., Richmond, Va.

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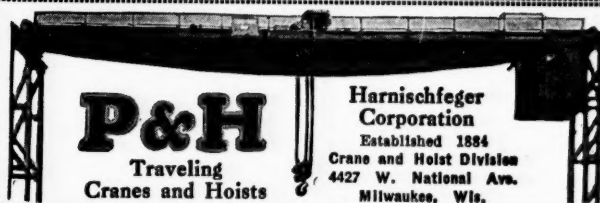
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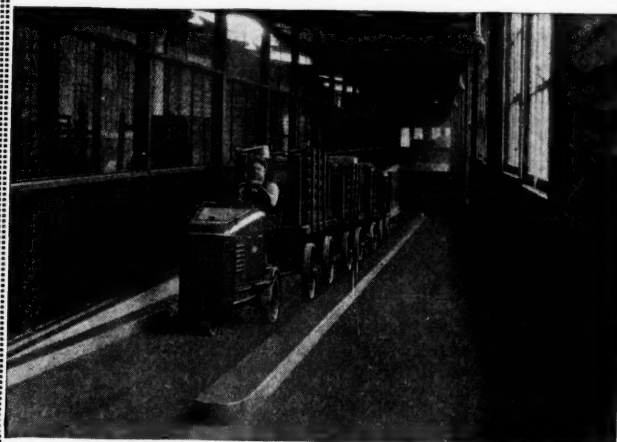
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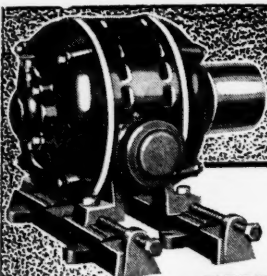
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 Airmap Corp. of Amer., Brooklyn, N. Y.  
 Barstow & Co., W. S., Reading, Pa.  
 Biggs Engr. Co., W. E., Knoxville, Tenn.  
 Charlton & Davis, Ft. Lauderdale, Fla.  
 Converse & Co., J. B., Mobile, Ala.  
 Engineering Service Corp., Houston, Tex.  
 Harza Engineering Co., Chicago.  
 Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.  
 Herty, Charles H., New York City.  
 Lockwood Greene Engrs., Inc., New York.  
 Main, Inc., Chas. T., Boston, Mass.  
 Smith, Elroy G., Augusta, Ga.  
 Stillman & Van Sledright, New York, N. Y.  
 Wadleigh & Bailey, Washington, D. C.  
 White Engineering Corp., J. G., New York.  
 Whitman, Requaardt & Smith, Balto., Md.  
 Wiedeman & Singleton, Inc., Atlanta, Ga.  
 Williamson, Lee H., Charlottesville, Va.

—(Dams.)  
 Alpaugh & Sons, Chas. W., Manassas, Va.  
 Battey & Kipp, Inc., Chicago, Ill.  
 Byllesby Engineering and Management Corp., Chicago, Ill.  
 Floyd & Lochridge, Dallas, Texas.  
 Gardner & Howe, Memphis, Tenn.  
 Hardaway Contracting Co., Columbus, Ga.  
 Harza Engineering Co., Chicago.  
 Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.  
 Lee, William S., Charlotte, N. C.  
 Main, Inc., Chas. T., Boston, Mass.  
 Serrine & Co., J. E., Greenville, S. C.  
 Tucker & Laxton, Charlotte, N. C.  
 Wheeler, Walter H., Minneapolis, Minn.  
 White Engineering Corp., J. G., New York.

—(Drainage and Irrigation.)  
 Floyd & Lochridge, Dallas, Texas.  
 Ford, Bacon & Davis, Inc., New York.  
 Fuller & McClintock, New York, N. Y.  
 Hills Co., George B., Jacksonville, Fla.  
 Huey, S. E., Monroe, La.

—(Efficiency.)  
 Barstow & Co., W. S., Reading, Pa.  
 Ernst & Ernst, New York, N. Y.  
 Whitman, Requaardt & Smith, Balto., Md.

—(Electrical.)  
 Battey & Kipp, Inc., Chicago, Ill.  
 Engineering Service Corp., Houston, Tex.  
 Hoosier Engineering Co., Chicago, Ill.  
 Lee, William S., Charlotte, N. C.  
 Lockwood Greene Engrs., Inc., New York.  
 Main, Inc., Chas. T., Boston, Mass.  
 Mullergren, Arthur L., Kansas City, Mo.  
 Sanderson & Porter, New York, N. Y.  
 Stone & Webster, Inc., Boston, Mass.  
 Tucker & Laxton, Charlotte, N. C.  
 Webb Electric Co., Anderson, S. C.  
 White Co., Gilbert C., Durham, N. C.  
 Wiley & Wilson, Lynchburg, Va.

—(Electric-Light and Power Plants.)  
 Battey & Kipp, Inc., Chicago, Ill.  
 Biggs Engr. Co., W. E., Knoxville, Tenn.  
 Byllesby Engineering and Management Corp., Chicago, Ill.  
 Ford, Bacon & Davis, Inc., New York.  
 Lee, William S., Charlotte, N. C.  
 Main, Inc., Chas. T., Boston, Mass.  
 Mullergren, Arthur L., Kansas City, Mo.

Sanderson & Porter, New York, N. Y.  
 Scofield Engineering Co., Phila., Pa.  
 Stone & Webster, Inc., Boston, Mass.  
 Tucker & Laxton, Charlotte, N. C.  
 White Engineering Corp., J. G., New York.  
 White Co., Gilbert C., Durham, N. C.

—(Flood Control.)  
 Floyd & Lochridge, Dallas, Texas.  
 Harza Engineering Co., Chicago.

—(Forest.)  
 Lacey & Co., Jas. D., New York, N. Y.

—(Gas.)  
 Byllesby Engineering and Management Corp., Chicago, Ill.  
 Ford, Bacon & Davis, Inc., New York.  
 Huey, S. E., Monroe, La.

—(Geological.)  
 De Kalb, Courtenay, New York City.  
 Froehling & Robertson, Richmond, Va.  
 Wadleigh & Bailey, Washington, D. C.  
 Withers, R. S., Jackson, Miss.

—(Harbor Improvements.)  
 Billingsley, James W., New Orleans, La.  
 Engineering Service Corp., Houston, Tex.  
 Fay, Spofford & Thorndike, Boston, Mass.

—(Heating.)  
 Battey & Kipp, Inc., Chicago, Ill.  
 Biggs Engr. Co., W. E., Knoxville, Tenn.  
 Wiley & Wilson, Lynchburg, Va.

—(Hydraulic.)  
 Alpaugh & Sons, Chas. W., Manassas, Va.  
 Floyd & Lochridge, Dallas, Texas.  
 Fuller & McClintock, New York, N. Y.  
 Harza Engineering Co., Chicago.  
 Main, Inc., Chas. T., Boston, Mass.  
 Whitman, Requaardt & Smith, Balto., Md.

—(Hydro-electric.)  
 Alpaugh & Sons, Chas. W., Manassas, Va.  
 Battey & Kipp, Inc., Chicago, Ill.  
 Byllesby Engineering and Management Corp., Chicago, Ill.  
 Harza Engineering Co., Chicago.  
 Lee, William S., Charlotte, N. C.  
 Main, Inc., Chas. T., Boston, Mass.  
 Mees & Mees, Charlotte, N. C.  
 Sanderson & Porter, New York, N. Y.  
 Scofield Engineering Co., Phila., Pa.  
 Serrine & Co., J. E., Greenville, S. C.  
 Tucker & Laxton, Charlotte, N. C.  
 White Engineering Corp., J. G., New York.  
 Whitman, Requaardt & Smith, Balto., Md.

—(Ice and Refrigerating.)  
 Engineering Service Corp., Houston, Tex.

—(Industrial Plants.)  
 Ballinger Co., Philadelphia, Pa.  
 Barstow & Co., W. S., Reading, Pa.  
 Battey & Kipp, Inc., Chicago, Ill.  
 Biggs Engr. Co., W. E., Knoxville, Tenn.  
 Billingsley, James W., New Orleans, La.  
 Charleston Constructors, Inc., Charleston, S. C.  
 Consoer, Older & Quinlan, Inc., Chicago.  
 Converse & Co., J. B., Mobile, Ala.  
 Fay, Spofford & Thorndike, Boston, Mass.  
 Gardner & Howe, Memphis, Tenn.  
 Greiner & Co., J. E., Baltimore, Md.  
 Herty, Charles H., New York City.  
 Hills Co., George B., Jacksonville, Fla.  
 Lockwood Greene Engrs., Inc., New York.  
 MacElwee & Crandall, Inc., Cambridge, Mass.  
 Main, Inc., Chas. T., Boston, Mass.  
 Mees & Mees, Charlotte, N. C.  
 Morgan Constr. Co., Worcester, Mass.  
 Mullergren, Arthur L., Kansas City, Mo.  
 Preacher & Co., Inc., G. Lloyd, Atlanta.  
 Sanderson & Porter, New York, N. Y.  
 Scofield Engineering Co., Phila., Pa.  
 Serrine & Co., J. E., Greenville, S. C.  
 Smith, Elroy G., Augusta, Ga.  
 Stone & Webster, Inc., Boston, Mass.  
 Turner, C. A. P., Minneapolis, Minn.  
 Widmer Engineering Co., St. Louis, Mo.  
 Williamson, Lee H., Charlottesville, Va.

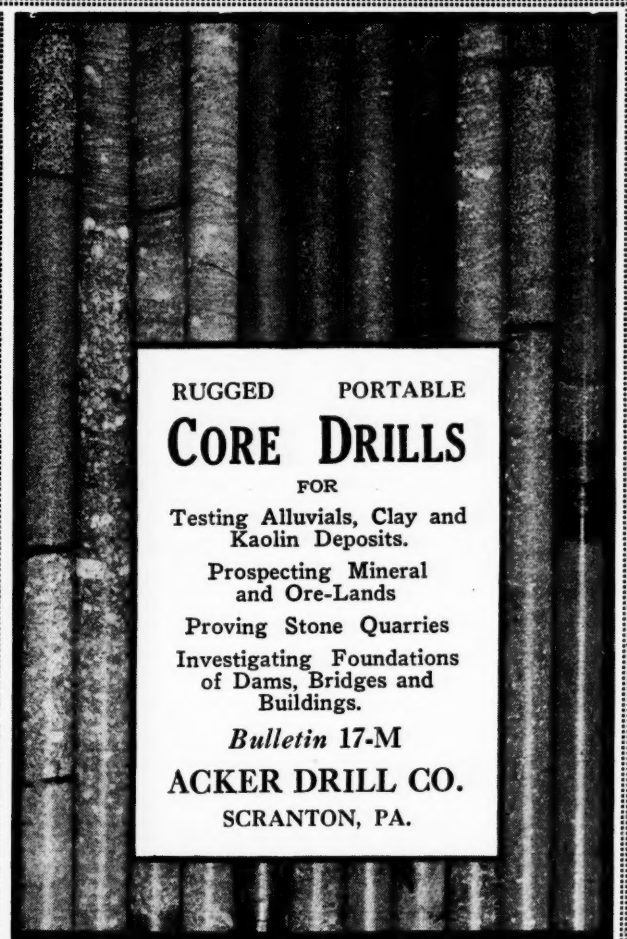
—(Industrial Survey.)  
 Converse & Co., J. B., Mobile, Ala.  
 Herty, Charles H., New York City.  
 Lockwood Greene Engrs., Inc., New York.  
 Wadleigh & Bailey, Washington, D. C.

—(Inspection and Tests.)  
 Barrow-Agee Laboratories, Memphis, Tenn.  
 Conard & Busby, Burlington, N. J.  
 Dow & Smith, New York, N. Y.  
 Flood & Co. Walter H., Chicago, Ill.  
 Froehling & Robertson, Inc., Richmond, Va.  
 Hunt Co., Robert W., Chicago, Ill.  
 Picard Laboratories, Birmingham, Ala.  
 Pittsburgh Testing Laboratories, Pittsburgh, Pa.  
 Southwestern Laboratories, Ft. Worth, Tex.

—(Landscapes.)  
 Draper, E. S., Charlotte, N. C.


—(Lighting.)  
 Battey & Kipp, Inc., Chicago, Ill.  
 Byllesby Engineering and Management Corp., Chicago, Ill.  
 Ford, Bacon & Davis, Inc., New York.  
 General Electric Vapor Lamp Co., Hoboken, N. J.  
 Wiley & Wilson, Lynchburg, Va.

—(Mechanical.)  
 Battey & Kipp, Inc., Chicago, Ill.  
 Charlton & Davis, Ft. Lauderdale, Fla.  
 Engineering Service Corp., Houston, Tex.  
 Lee, William S., Charlotte, N. C.  
 Lockwood Greene Engrs., Inc., New York.  
 Main, Inc., Chas. T., Boston, Mass.  
 Mees & Mees, Charlotte, N. C.  
 Maign, Bassett & Slaughter, Phila., Pa.  
 Sanderson & Porter, New York, N. Y.  
 Southern Products Corp., New Orleans.  
 Wiley & Wilson, Lynchburg, Va.



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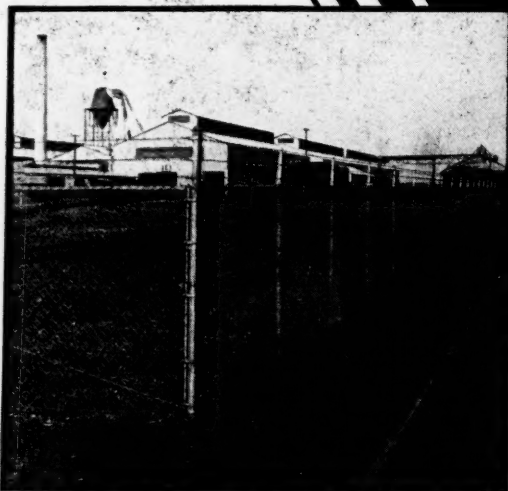
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Dixie Electro Plating Co., Houston, Tex.

### —(Mining. See Engineers, Geological.)

### —(Municipal.)

Billingsley, James W., New Orleans, La.  
Consoer, Older & Quinlan, Inc., Chicago.  
Dow & Smith, New York, N. Y.  
Harrub Engr. Co., C. N., Nashville, Tenn.  
Hills Co., George B., Jacksonville, Fla.  
Howerton Engineering Co., Asheville, N.C.  
Huey, S. E., Monroe, La.  
Knowles, Inc., Morris, Pittsburgh, Pa.  
McCrary Co., The, J. B., Atlanta, Ga.  
Spoon & Lewis, Greensboro, N. C.  
White Co., Gilbert C., Durham, N. C.

### —(Paving and Roads.)

Billingsley, James W., New Orleans, La.  
Dow & Smith, New York, N. Y.  
Freeland, Roberts & Co., Nashville, Tenn.  
Harrub Engr. Co., C. N., Nashville, Tenn.  
Howerton Engineering Co., Asheville, N.C.  
Spoon & Lewis, Greensboro, N. C.  
White Co., Gilbert C., Durham, N. C.

### —(Production.)

Scofield Engr. Co., Phila., Pa.

### —(Public Service Properties.)

Byllesby Engineering & Management Corp., Chicago, Ill.  
Ford, Bacon & Davis, Inc., New York.  
Fuller & McClintock, New York, N. Y.  
Knowles, Inc., Morris, Pittsburgh, Pa.  
Main, Inc., Chas. T., Boston, Mass.  
Sanderson & Porter, New York, N. Y.  
Scofield Engineering Co., Phila., Pa.  
Stone & Webster, Inc., Boston, Mass.  
White Engineering Corp., J. G., New York.

### —(Railroad.)

Huey, S. E., Monroe, La.  
Mees & Mees, Charlotte, N. C.

### —(Reinforced Concrete Bridges, Buildings, etc.)

Atlantic Bridge Co., Greensboro, N. C.  
Ballinger Co., Philadelphia, Pa.  
Batter & Kipp, Inc., Chicago, Ill.  
Fay, Spofford & Thorndike, Boston, Mass.  
Freeland, Roberts & Co., Nashville, Tenn.  
Gardner & Howe, Memphis, Tenn.  
Greiner & Co., J. E., Baltimore, Md.  
Lockwood Greene Engrs., Inc., New York.  
Main, Inc., Chas. T., Boston, Mass.  
Steel & Leiby, Knoxville, Tenn.  
Tucker & Laxton, Charlotte, N. C.  
Turner, C. A. P., Minneapolis, Minn.  
Wheeler, Walter H., Minneapolis, Minn.

### —(Sanitary.)

Harza Engineering Co., Chicago.  
Whitman, Requaardt & Smith, Balto., Md.

### —(Sewage Disposal Plants.)

Fuller & McClintock, New York, N. Y.  
McCrary Co., The, J. B., Atlanta, Ga.  
Whitman, Requaardt & Smith, Balto., Md.  
Wiedeman and Singleton, Inc., Atlanta.

### —(Sewerage and Waterworks.)

Conard & Buzby, Burlington, N. J.  
Conner, Older & Quinlan, Inc., Chicago.  
Ford, Bacon & Davis, Inc., New York.  
Fuller & McClintock, New York, N. Y.  
Hardaway Contracting Co., Columbus, Ga.  
Harrub Engr. Co., C. N., Nashville, Tenn.  
Hills Co., George B., Jacksonville, Fla.  
Howerton Engineering Co., Asheville, N.C.  
Knowles, Inc., Morris, Pittsburgh, Pa.  
Mees & Mees, Charlotte, N. C.  
Sanderson & Porter, New York, N. Y.  
Spoon & Lewis, Greensboro, N. C.  
Tucker & Laxton, Charlotte, N. C.  
White Co., Gilbert C., Durham, N. C.  
White Engineering Corp., J. G., New York.  
Whitman, Requaardt & Smith, Balto., Md.  
Wiedeman & Singleton, Inc., Atlanta, Ga.  
Williamson, Lee H., Charlottesville, Va.

### —(Structural.)

Freeland, Roberts & Co., Nashville, Tenn.  
Hedrick, Inc., Ira G., Hot Springs Nat'l Park, Ark.  
Hills Company, Geo. B., Jacksonville, Fla.  
Huey, S. E., Monroe, La.  
Lockwood Greene Engrs., Inc., New York.  
Turner, C. A. P., Minneapolis, Minn.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Whitman, Requaardt & Smith, Balto., Md.

### —(Textile Mills.)

Ballinger Co., Philadelphia, Pa.  
Lockwood Greene, Engrs., Inc., New York.  
Main, Inc., Chas. T., Boston, Mass.  
Sirrino & Co., J. E., Greenville, S. C.

### —(Transmission Lines.)

Hoozier Engineering Co., Chicago, Ill.

### —(Ventilating and Heating.)

Biggs Eng. Co., W. E., Knoxville, Tenn.  
Wiley & Wilson, Lynchburg, Va.

### —(Water Supply.)

Floyd & Lochridge, Dallas, Texas.  
Whitman, Requaardt & Smith, Balto., Md.

### —(Engines (Compressed Air.)

Dake Engine Co., Grand Haven, Mich.

### —(Diesel Type.)

Fairbanks, Morse & Co., Chicago, Ill.

### —(Gas and Gasoline.)

Noro Engine Co., Lansing, Mich.  
Sterling Engine Co., Buffalo, N. Y.

### —(Hoisting.)

Mundy Hoisting Engine Co., J. S., New York, N. Y.

### —(Marine.)

Fairbanks, Morse & Co., Chicago, Ill.

### —(Oil.)

Ingersoll-Rand Co., New York, N. Y.  
Continental Gin Co., Birmingham, Ala.

### —(Steam.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Cole Mfg. Co., E. D., Newnan, Ga.  
Lefel & Co., James, Springfield, O.  
Lombard Iron Works & Supply Co., Augusta, Ga.  
Morris Machine Works, Baldwinsville, N.Y.  
Schofield's Sons Co., J. S., Macon, Ga.

### ENVELOPES.

Young & Seldon Co., Baltimore, Md.

### ESTIMATORS (Building & Construction.)

Martin, Joe B., Charlotte, N. C.  
Spring, Charles Herbert, Greensboro, N.C.

### EXCAVATING MACHINERY.

Bay City Shovel, Inc., Bay City, Mich.  
Bucyrus-Erie Co., Erie, Penna.  
Harnischfeger Corp., Milwaukee, Wis.  
Hayward Co., The, New York, N. Y.  
Industrial Brownhoist Corp., Cleveland.  
Monaghan Mfg. Corp., Chicago, Ill.  
National Equipment Corp. (Koehring, Insley, Parsons), Milwaukee, Wis.  
Northwest Engineering Co., Chicago, Ill.  
Owen Bucket Co., The, Cleveland, Ohio.  
Thew Shovel Co., The, Lorain, Ohio.  
Universal Power Shovel Co., Milwaukee, Wis.

### EXCAVATORS (Clamshell and Orange Peel.)

Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.  
Thew Shovel Co., Lorain, Ohio.

### —(Dragline. See Dragline Excavators.)

### —(Trench.)

Bay City Shovel, Inc., Bay City, Mich.  
Bucyrus-Erie Co., Erie, Penna.  
Harnischfeger Corp., Milwaukee, Wis.  
Hayward Co., The, New York, N. Y.  
Monaghan Mfg. Corp., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.  
Universal Power Shovel Co., Milwaukee, Wis.

### EXPLOSIVES.

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.  
Hercules Powder Co., Inc., Wilmington, Del.

### FACTORY Management Systems.

Ernst & Ernst, New York, N. Y.

### FEE-WATER HEATERS and Purifiers.

American Water Softener Co., Phila., Pa.

### FENCE POSTS (Creosoted.)

Ayer & Lord Tie Co., Chicago, Ill.

### FENCING Entrance Gates (Iron, Steel and Wire.)

American Steel and Wire Co., Balto., Md.  
Anchor Post Fence Co., Baltimore, Md.  
Cyclone Fence Co., Waukegan, Ill.  
Gulf States Steel Co., Birmingham, Ala.  
Page Fence Association, Chicago, Ill.  
Stewart Iron Works Co., Cincinnati, O.

### —(Field and Industrial, Wire Woven.)

American Steel and Wire Co., Balto., Md.  
Anchor Post Fence Co., Baltimore, Md.  
Cyclone Fence Co., Waukegan, Ill.  
Gulf States Steel Co., Birmingham, Ala.  
Page Fence Association, Chicago, Ill.  
Stewart Iron Works Co., Cincinnati, O.

### FERTILIZER MACHINERY.

Raymond Bros., Impact Pulv. Co., Chicago.

### FILTER (For Domestic and Industrial Purposes.)

American Water Softener Co., Phila., Pa.  
International Filter Co., Chicago, Ill.  
Roberts Filter Mfg. Co., Darby (Phila.), Pa.  
Seale & Sons Co., Wm. E., Oakmont, Pa.

### —Cloth.

Newark Wire Cloth Co., Newark, N. J.

### FINANCING.

Akers, William, Atlanta, Ga.  
Electric Bond & Share Co., New York.  
Garraway & Co., S. G., Chicago.  
Gay & Co., W. O., New York, N. Y.

### FIRE CLAY.

North American Refractories Co., Cleveland, Ohio.

### FIRE EXTINGUISHERS.

Myers & Bro. Co., The F. E., Ashland, O.

**FIREPROOF Building Material.**

Bannon Pipe Co., Louisville, Ky.

Robertson Co., H. H., Pittsburgh.

**—Doors and Shutters.**Kinneer Mfg. Co., The, Columbus, Ohio.  
Moeschi-Edwards Corr. Co., Cincinnati, O.  
Richards-Wilcox Mfg. Co., Aurora, Ill.  
Wilson Corp., The J. G., New York City.**—Material and Construction.**

Edwards Mfg. Co., Cincinnati, O.

**FITTINGS (Wire Rope.)**

Leschen &amp; Sons Rope Co., A., St. Louis.

**FLANGES (Iron and Steel.)**Amer. Cast Iron Pipe Co., Birmingham.  
Dart Mfg. Co., E. M., Providence, R. I.  
Taylor Forge & Pipe Wks., Chicago, Ill.  
U. S. Pipe & Foundry Co., Burlington, N. J.  
Vogt Machine Co., Henry, Louisville, Ky.**—and Flanged Fittings.**

Grinnell Co., Inc., Providence, R. I.

**FLOOR (Cork Composition.)**

Congoleum-Nairn, Inc., Kearny, N. J.

**—(Hardwood, Maple, Oak.)**Kirby Lumber Co., Houston, Tex.  
Nashville Hardwood Flooring Co., Nashville, Tenn.**—(Linoleum.)**

Congoleum-Nairn, Inc., Kearny, N. J.

**—(Northern Hard Maple.)**

Holt Hardwood Co., Oconto, Wis.

**—(Open Steel.)**Blaw-Knox Co., Pittsburgh, Pa.  
Irving Iron Works Co., Long Is. City, N.Y.  
Kerlow Steel Flooring Co., Jersey City, N.J.**—Covering.**

Congoleum-Nairn, Inc., Kearny, N. J.

**—Hardner (Concrete.)**Sonneborn Sons, Inc., L., New York.  
Stonhard Co., Phila., Pa.**—Plates and Stair Treads.**American Pressed Steel Co., Phila., Pa.  
Central Iron & Steel Co., Harrisburg, Pa.  
Ryerson & Son, Inc., Jos. T., St. Louis and New York.**—Steel (For Concrete Culverts, Roads, Streets.)**

Blaw-Knox Co., Pittsburgh, Pa.

**—Wax.**

Congoleum-Nairn, Inc., Kearny, N. J.

**—(Wood) Preservative.**

Stonhard Co., Philadelphia, Pa.

**FLUSH-TANK SIPHONS.**

Pacific Flush-Tank Co., New York, N. Y.

**FLYER PRESSERS.**

Southern Spindle &amp; Flyer Co., Charlotte, N. C.

**FLYERS.**

Southern Spindle &amp; Flyer Co., Charlotte, N. C.

**FORGINGS (Drop.)**

Vogt Machine Co., Henry, Louisville, Ky.

**FORMS, Steel (For Concrete Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.)**

Blaw-Knox Co., Pittsburgh, Pa.

**FOUNDATION MASONRY.**

Calligan Co., A. H., Richmond, Va.

**FOUNDRIES and Machine Shops.**Deemer Steel Casting Co., New Castle, Del.  
General Machine Works, York, Pa.  
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.

Goldens' Fdry. &amp; Mch. Co., Columbus, Ga.

Lombard Iron Works &amp; Supply Co., Augusta, Ga.

Mountain States Steel Foundries Parkersburg, W. Va.

Richmond Foundry &amp; Mfg. Co., Richmond, Va.

**FOUNDRY Equipment and Supplies.**

Chain Belt Co., Milwaukee, Wis.

Hill &amp; Griffith Co., Cincinnati, O.

Whiting Corp., Harvey, Ill.

**—Facings (Talc and Soapstone.)**

Hill &amp; Griffith Co., Cincinnati, O.

**FURNACE LININGS.**

North American Refractories Co., Cleveland, Ohio.

**FURNACES (Industrial.)**

Combustion Engr. Corp., New York City.

**—(Water-Cooled.)**Combustion Engr. Corp., New York City.  
Fuller Lehigh Co., Fullerton, Pa.**GALVANIZED Products.**Birmingham Galvanizing Co., Birmingham, Ala.  
Cattle & Bros., Jos. P., Philadelphia, Pa.**—Steel and Iron.**American Rolling Mill Co., Middletown, O.  
American Sheet & Tin Plate Co., Pittsburgh, Pa.

Granite City Steel Co., Granite City, Ill.

Republic Steel Corp., Youngstown, Ohio.

**GALVANIZING (Cadmium Plating.)**

Birmingham Galvanizing Co., Birmingham, Ala.

**—(Hot Dip.)**Bessemer Galvanizing Works, Birmingham, Ala.  
Birmingham Galvanizing Co., Birmingham, Ala.

Cattle &amp; Bros., Jos. P., Philadelphia, Pa.

Newport News Shipbuilding &amp; Drydock Co., Newport News, Va.

**GARAGES (Metal.)**

Edwards Mfg. Co., Cincinnati, O.

**GAS HOLDERS.**

Chattanooga Boiler &amp; Tank Co., Chattanooga, Tenn.

Chicago Bridge &amp; Iron Works, Atlanta, Ga.

**—Producers.**

Gas-O-Flame Stove Works, Port Deposit, Md.

Morgan Construction Co., Worcester, Mass.

Wood &amp; Co., R. D., Philadelphia, Pa.

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Gulf Refining Co., Pittsburgh, Pa.

**GASOLINE SHOVELS (See Shovels.)****GATES (Automatic Drainage.)**

Armco Culvert Mfrs. Assn., Middletown, O.

Dixie Culvert &amp; Metal Co., Atlanta, Ga.

Dixie Culvert Mfg. Co., Little Rock, Ark.

Louisiana Corr. Culvert Co., Baton Rouge, La.

Tenn. Metal Culvert Co., Nashville, Tenn.

Western Metal Mfg. Co., Houston, Texas.

**GAUGE GLASSES.**

Jenkins Bros., New York, N. Y.

**GEARS.**

Bostrom Mfg. Co., E. A., Atlanta, Ga.

DeLaval Steam Turbine Co., Trenton, N.J.

Earle Gear &amp; Machine Co., Phila., Pa.

General Electric Co., Schenectady, N. Y.

Woods' Sons Co., T. B., Chambersburg, Pa.

**—(Worm Reduction.)**

DeLaval Steam Turbine Co., Trenton, N.J.

**GENERATORS, MOTORS (New.)**

General Electric Co., Schenectady, N. Y.

Howell Electric Motors Co., Howell, Mich.

Westinghouse Elec. &amp; Mfg. Co., E. Pittsburgh, Pa.

**—(Used.)**

Gregory Electric Co., Chicago.

Nashville Ind. Corp., Old Hickory, Tenn.

Nussbaum &amp; Co., V. M., Ft. Wayne, Ind.

O'Brien Machinery Co., Phila., Pa.

Randle Machinery Co., The, Cincinnati, O.

**GEOLOGISTS. (See Engineers, Geological.)****GLASS (Art.)**

Hires Turner Glass Co., Philadelphia, Pa.

**—(Plate.)**

Blue Ridge Glass Corp., Kingsport, Tenn.

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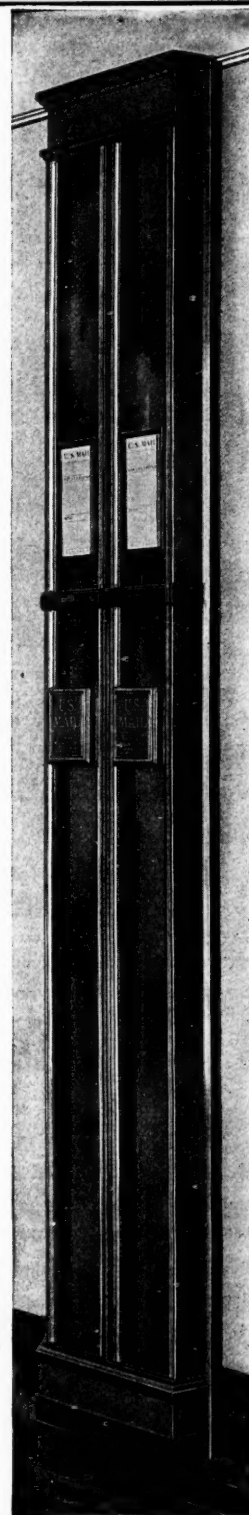
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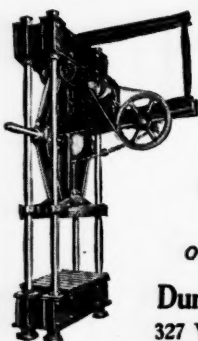
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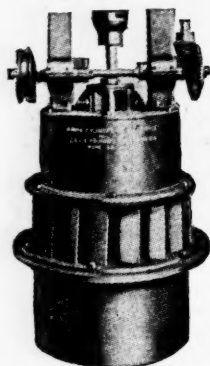
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Greenpoint Iron & Pipe Co., Inc., Brook-  
lyn, N. Y.  
Hudson Pipe & Supply Co., Bayonne, N. J.  
Maryland Pipe & Steel Corp., Baltimore,  
Md.  
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Greenpoint Iron & Pipe Co., Inc., Brook-  
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—Lines (Water, Gas & Oil—  
Riveted or Welded.)

Biggs Boiler Works Co., Akron, Ohio.

—Machinery (Concrete.)

Quinn Wire & Iron Works, Boone, Iowa.

—Unions and Joints.

Dart Mfg. Co., E. M., Providence, R. I.

—Systems (Industrial.)

Grinnell Co., Inc., Providence, R. I.

Pittsburgh Piping & Equip. Co., Pitts-  
burgh, Pa.

Power Piping Co., Pittsburgh, Pa.

**PLATES (Steel.)**

Bethlehem Steel Co., Bethlehem, Pa.

Carnegie Steel Co., Pittsburgh, Pa.

Central Iron & Steel Co., Harrisburg, Pa.

Chattanooga Boiler & Tank Co., Chat-  
tanooga, Tenn.

Granite City Steel Co., Granite City, Ill.

Gulf States Steel Co., Birmingham, Ala.

Ryerson & Son, Inc., Jos. T., St. Louis  
and New York.

Tennessee Coal, Iron & Railroad Co., Bir-  
mingham.

**PNEUMATIC TOOLS.**

Ingersoll-Rand Co., New York, N. Y.

**POLES (Creosoted.)**

Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville, Ky.

Ayer & Lord Tie Co., Inc., Chicago.

Brown Wood Preserving Co., Louisville, Ky.

Carolina Wood Preserving Co., Charleston,  
S. C.

Savannah Creosoting Co., Savannah, Ga.

Taylor-Colquitt Co., Spartanburg, S. C.

**—(Tubular, Steel.)**

National Tube Co., Pittsburgh, Pa.

**—(Yellow Pine.)**

Jackson Lumber Co., Lockhart, Ala.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York City.

**POLISHING MACHINERY.**

(Wheels, Blocks.)

Carborundum Co., Niagara Falls, N. Y.

**PORTABLE HOUSES (Metal.)**

Braden Steel Corp., Tulsa, Okla.

**POST CAPS.**

Duplex Hanger Co., Cleveland, Ohio.

**POWER TRANSMISSION MA-  
CHINERY.**

American Pulley Co., Philadelphia, Pa.

Diamond Chain & Mfg. Co., Indianapolis.

Goldens' Fdry. & Mch. Co., Columbus, Ga.

O'Brien Machinery Co., Phila., Pa.

Schodde's Sons Co., J. S., Macon, Ga.

Wood's Sons Co., T. B., Chambersburg, Pa.

**—(Pumps.)**

Luttwieler Pumping Engine Co., Roches-  
ter, N. Y.

**PREHEATERS (Air.)**

Combustion Engr. Corp., New York City.

**PRESSES, (Baling, Cottonseed  
Oil, Hydraulic and Power.)**

Dunning & Boschert Press Co., Inc.,  
Syracuse, N. Y.

Ripley Foundry & Machine Co., Ripley, O.

Tomlin-Harris Machine Co., Cordale, Ga.

**—(Metal Stamping.)**

Bliss Co., E. W., Brooklyn, N. Y.

**PRINTERS (Book, Catalog, Job.)**

Smith & Son Co., Oscar T., Baltimore, Md.

Young & Selden Co., Baltimore, Md.

**PRODUCER (Gas Machines.)**

Gas-O-Flame Stove Wks., Fort Deposit, Md.  
Morgan Construction Co., Worcester, Mass.  
Wood & Co., R. D., Phila., Pa.

**PULLEYS (Friction Clutch.)**

Caldwell Co., Inc., W. E., Louisville, Ky.  
Wood's Sons Co., T. B., Chambersburg, Pa.

**—(Motor and Machine.)**

American Pulley Co., Philadelphia, Pa.

**—(Steel Split.)**

American Pulley Co., Philadelphia, Pa.

**—Shafting and Hangers.**

American Pulley Co., Philadelphia, Pa.  
Goldens' Fdy. & Mch. Co., Columbus, Ga.  
Wood's Sons Co., T. B., Chambersburg, Pa.

**PULVERIZED COAL EQUIPMENT.**

Combustion Engr. Corp., New York, N. Y.  
Fuller Lehigh Co., Fullerton, Pa.  
Whiting Corp., Harvey, Ill.

**PULVERIZERS (See Crushing and Pulverizing Machinery.)****PUMPING MACHINERY.**

Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.  
Chain Belt Co., Milwaukee, Wis.  
Cook, Inc., A. D., Lawrenceburg, Ind.  
Fairbanks, Morse & Co., Chicago, Ill.  
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.  
Luitwieler Pumping Engine Co., Rochester, N. Y.  
Myers & Bro. Co., The F. E., Ashland, O.  
National Equipment Corp., (C. H. & E. Division), Milwaukee, Wis.  
Platt Iron Works, Dayton, Ohio.  
Viking Pump Co., Cedar Falls, Iowa.  
Virginia Mch. & Well Co., Richmond, Va.

**PUMPS (Air.)**

Manistee Iron Works Co., Manistee, Mich.

**—(Air Lift.)**

Ingersoll-Rand Co., New York, N. Y.  
Sullivan Machinery Co., Chicago, Ill.

**—(Boiler Feed.)**

Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.  
DeLaval Steam Turbine Co., Trenton, N. J.  
Erie Pump & Engine Wks., Medina, N. Y.  
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.  
Manistee Iron Works Co., Manistee, Mich.  
Myers & Bro. Co., The F. E., Ashland, O.

**—(Centrifugal.)**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.  
DeLaval Steam Turbine Co., Trenton, N. J.  
Erie Pump & Engine Wks., Medina, N. Y.  
Fairbanks, Morse & Co., Chicago, Ill.  
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.  
Jaeger Machine Co., Columbus, Ohio.  
Layne & Bowler, Inc., Memphis, Tenn.  
Manistee Iron Works Co., Manistee, Mich.  
Morris Machine Wks., Baldwinville, N. Y.  
Novo Engine Co., Lansing, Mich.

**—(Contractors.)**

Erie Pump & Engine Wks., Medina, N. Y.  
Novo Engine Co., Lansing, Mich.

**—(Deep Well.)**

Cook, Inc., A. D., Lawrenceburg, Ind.  
Layne & Bowler, Inc., Memphis, Tenn.  
Luitwieler Pumping Engine Co., Rochester, N. Y.  
Novo Engine Co., Lansing, Mich.

**—(Diaphragm.)**

Novo Engine Co., Lansing, Mich.

**—(Hydraulic.)**

Dunning & Boschert Press Co., Inc., Syracuse, N. Y.

**—(Power.)**

Platt Iron Works, Dayton, Ohio.  
Sterling Engine Co., Buffalo, N. Y.

**—(Pulverized Coal.)**

Fuller Lehigh Co., Fullerton, Pa.

**—(Rotary.)**

Viking Pump Co., Cedar Falls, Iowa.

**—(Sand and Dredging.)**

Ellicott Machine Corp., Baltimore, Md.  
Erie Pump & Engine Wks., Medina, N. Y.  
Georgia Iron Works, Augusta, Ga.

**—(Steam.)**

Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.  
Fairbanks, Morse & Co., Chicago, Ill.  
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.  
Platt Iron Works, Dayton, Ohio.

**—(Vacuum.)**

Ingersoll-Rand Co., New York, N. Y.  
Sullivan Machinery Co., Chicago, Ill.

**—(Water Works.)**

Layne & Bowler, Inc., Memphis, Tenn.  
Manistee Iron Works Co., Manistee, Mich.

**PUNCHING AND SHEARING MACHINERY.**

Bliss Co., E. W., Brooklyn, N. Y.  
Whitney Metal Tool Co., Rockford, Ill.

**RACK RAKES.**

Newport, News Shipbuilding & Drydock Co., Newport News, Va.

**RADIATOR ENCLOSURES.**

Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

**RAILINGS (Iron Pipe.)**

Pipe Railing Constr. Co., Long Island City, N. Y.

**—and Grilles, Iron and Brass.**

(Banks and Offices.)  
Ludlow Saylor Wire Co., St. Louis, Mo.

**RAILROAD Equipment and Supplies (New.)**

Robinson & Orr, Pittsburgh, Pa.

Whiting Corp., Harvey, Ill.

**—Equipment and Supplies (Used.)**

Birmingham Rail & Loco. Co., Birmingham, Ala.  
Lewis & Co., Henry, Philadelphia, Pa.  
Smith & Co., W. M., Birmingham, Ala.  
Southern Iron and Equip. Co., Atlanta, Ga.  
Zelnicker Supply Co., W. A., St. Louis.

**—(Frogs and Switches.)**

Bethlehem Steel Co., Bethlehem, Pa.  
Koppel Ind. Car & Equip. Co., Koppel, Pa.  
Robinson & Orr, Pittsburgh, Pa.

**RAILROADS — (Offering Industrial, Agricultural and Commercial Opportunities.)**

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Central of Georgia Rwy., Savannah, Ga.  
Missouri-Kansas-Texas Lines, Dallas, Tex.  
Model Land Company, Flagler System, St. Augustine, Fla.  
Norfolk & Western Railway, Roanoke, Va.  
Tennessee Central Railway, Nashville.

**RAILS (New and Used.)**

Birmingham Rail & Loco. Co., Birmingham, Ala.  
Carnegie Steel Co., Pittsburgh, Pa.  
Lewis & Co., Henry, Philadelphia, Pa.  
Perry, Buxton, Doane Co., Philadelphia, Pa.  
Robinson & Orr, Pittsburgh, Pa.  
Smith & Co., W. M., Birmingham, Ala.  
Southern Iron & Equip. Co., Atlanta, Ga.  
Sweet's Steel Co., Williamsport, Pa.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.  
Zelnicker Supply Co., W. A., St. Louis.

**RAILWAYS (Industrial.)**

Easton Car & Construction Co., Easton, Pa.

Koppel Ind. Car & Equip. Co., Koppel, Pa.

**—(Marine.)**

Charleston Dry Dock and Machine Co., Charleston, S. C.

**RECEPTACLES (Self-Closing — Waste Paper.)**

Whitaker Paper Co., Baltimore, Md.

**REELS and SPOOLS. (Pressed Metal.)**

American Pulley Co., Philadelphia, Pa.

**REFRACORIES.**

Harbison-Walker Refractories Co., Pittsburgh, Pa.  
North American Refractories Co., Cleveland, Ohio.  
Taylor Sons Co., Charles, Cincinnati.

**REFRIGERATING Machinery (See Ice and Refrigerating Machinery and Supplies.)****REINFORCING for Concrete.**

American Steel and Wire Co., Balto., Md.  
Carnegie Steel Co., Pittsburgh, Pa.  
Connors Steel Co., Birmingham, Ala.  
Dietrich Brothers, Baltimore, Md.  
Gulf States Steel Co., Birmingham, Ala.  
Knoxville Iron Co., Knoxville, Tenn.  
Ryerson & Son, Inc., Jos. T., St. Louis and New York.  
Southern Engineering Co., Charlotte, N. C.  
Truscon Steel Co., Youngstown, Ohio.

**RESURFACING MATERIALS (Floor, Roof and Roadways.)**

Stenhard Co., Phila., Pa.

**RETORTS (Special Process — Riveted or Welded.)**

Biggs Boiler Works, Akron, Ohio.

**RIVER & HARBOR IMPROVEMENTS, (Dredging, Docks, Wharves, etc.)**

Arundel Corp., The, Baltimore, Md.  
Atlantic Gulf and Pacific Co., New York.  
Kansas City Bridge Co., Kansas City.

**RIVETS.**

Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

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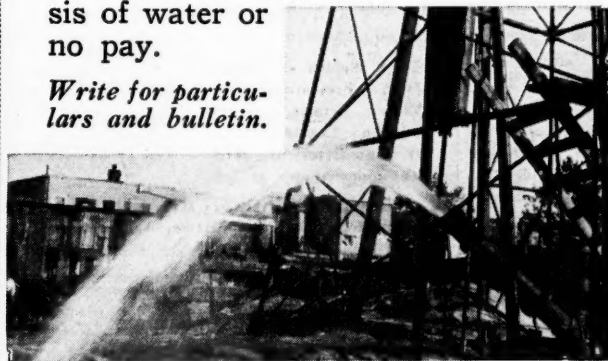
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Buffalo-Springfield Roller Co., Springfield, O.  
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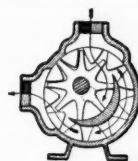
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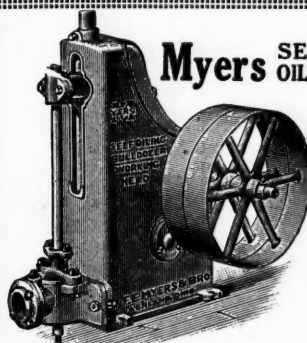
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Caterpillar Tractor Co., Peoria, Ill.

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Gulf Refining Co., Pittsburgh, Pa.

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Buffalo-Springfield Roller Co., Springfield, O.

Erie Machine Shops, Erie, Pa.

Huber Mfg. Co., The, Marion, Ohio.

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Eternit, Inc., St. Louis, Mo.

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American Rolling Mill Co., Middletown, O.

American Sheet and Tin Plate Co., Pittsburgh, Pa.

Edwards Mfg. Co., Cincinnati, O.

Gulf State Steel Co., Birmingham, Ala.

Milcor Steel Co., Milwaukee, Wis.

Moeschl-Edwards Corr. Co., Cincinnati, O.

Republic Steel Corp., Youngstown, Ohio.

Robertson Co., H. H., Pittsburgh.

Ryerson & Son, Jos. T., St. Louis and New York.

Truscon Steel Co., Youngstown, Ohio.

Youngstown Sheet and Tube Co., Youngstown, O.

### —Tile, Cement (Interlocking

Flat, Channel Glass.)

Amer. Cement Tile Mfg. Co., Pittsburgh.

### —Tiles.

Amer. Cement Tile Mfg. Co., Pittsburgh.

### ROPE (Manila, Sisal, Hemp, etc.)

Broderick & Bascom Rope Co., St. Louis.

### —Drives.

Wood's Sons Co., T. B., Chambersburg, Pa.

### RULES (Steel.)

Lufkin Rule Co., Saginaw, Mich.

### SAND.

Arundel Corp., Baltimore, Md.

Friend & Co., Inc., Petersburg, Va.

### SANITARY Drinking Fountains.

Rundle-Spence Mfg. Co., Milwaukee, Wis.

### SASH (Industrial.)

Truscon Steel Co., Youngstown, Ohio.

### SAWMILL Machinery.

Schofield's Sons Co., J. S., Macon, Ga.

### SAW RIGS.

National Equipment Corp., (C. H. & E. Division), Milwaukee, Wis.

### SAWS (Cold Metal.)

Earle Gear and Machine Co., Phila., Pa.

### SCAFFOLDING (Wooden.)

Patent Scaffolding Co., Chicago, Ill.

### SCHOOLS (Correspondence.)

International Correspondence Schools, Scranton, Pa.

### SCOOPS (Hand.)

American Mfg. Co., Chattanooga, Tenn.

### —(Wheeled.)

Riddell Co., W. H., Bucyrus, Ohio.

### SCRAPERS (Drag and Wheel.)

Sauerman Bros., Chicago, Ill.

### SCRAP IRON AND STEEL.

Hunts Sons, M. J., Philadelphia, Pa.

Perry, Buxton, Doane Co., Philadelphia.

Smith & Co., W. M., Birmingham, Ala.

### SCREEN CLOTH.

Seneca Wire & Mfg. Co., Fostoria, Ohio.

### SCREENING (For Concrete and Road Construction.)

American Limestone Co., Knoxville, Tenn.

### SCREENS (Sand, Gravel, Stone, Coal, Ore, etc.)

Chicago Perforating Co., Chicago, Ill.

Erdle Perforating Co., Rochester, N. Y.

Hendrick Mfg. Co., Carbondale, Pa.

Ludlow Saylor Wire Co., St. Louis, Mo.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

Mundt & Sons, Charles, Jersey City, N. J.

Universal Crusher Co., Cedar Rapids, Ia.

### —(Sifting.)

Newark Wire Cloth Co., Newark, N. J.

### SCREW-Machine Products.

Progressive Mfg. Co., Torrington, Conn.

### SCREWS (Machine.)

Progressive Mfg. Co., Torrington, Conn.

### SEAWALLS.

Shore-Line Builders, Inc., Jacksonville, Fla.

### SEPARATORS (Dust.)

Raymond Bros., Impact Pulv. Co., Chicago.

### SEWAGE Disposal Apparatus.

Pacific Flush-Tank Co., New York, N. Y.

### SEWER Joint Compounds.

Pacific Flush-Tank Co., New York, N. Y.

### —Pipe (Vitrified.)

Bannon Pipe Co., Louisville, Ky.

Dee Co., Wm. E., Oak Hill, Ohio.

Lee Clay Products Co., Clearfield, Ky.

Owensboro Sewer Pipe Co., Owensboro, Ky.

### SEWER PIPE MACHINERY.

(Concrete.)

Quinn Wire & Iron Works, Boone, Iowa.

### SHAFTING.

Ryerson & Sons, Inc., Jos. T., St. Louis and New York.

### —(Cold Rolled.)

Bliss & Laughlin, Inc., Harvey, Ill.

### —(Flexible.)

Strand & Co., N. A., Chicago, Ill.

### —Material (Tubular.)

National Tube Co., Pittsburgh, Pa.

### SHARPENING Stones.

Carborundum Co., Niagara Falls, N. Y.

### SHEET Metal Work.

Edwards Mfg. Co., Cincinnati, O.

### —Metal Working Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

Whitney Metal Tool Co., Rockford, Ill.

Yoder Co., The, Cleveland, Ohio.

### —Steel and Iron.

American Rolling Mill Co., Middletown, O.

American Sheet and Tin Plate Co., Pittsburgh, Pa.

Bethlehem Steel Co., Bethlehem, Pa.

Granite City Steel Co., Granite City, Ill.

Gulf States Steel Co., Birmingham, Ala.

Republic Steel Corp., Youngstown, Ohio.

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Youngstown Sheet & Tube Co., Youngstown, O.

### SHEETS (Asbestos.)

Eternit, Inc., St. Louis, Mo.

### —(Steel—Asbestos Covered.)

Robertson Co., H. H., Pittsburgh, Pa.

### SHINGLES (Asbestos.)

Eternit, Inc., St. Louis, Mo.

### —(Stain.)

Cabot, Inc., Samuel, Boston, Mass.

### SHIPPING CARTONS (Corrugated Paper.)

Hinde & Dauch Paper Co., Sandusky, O.

### SHOVELS (Hand.)

American Mfg. Co., Chattanooga, Tenn.

### —(Steam, Gas and Electric Power.)

Bucyrus-Erie Co., Erie, Penna.

Harnischfeger Corp., Milwaukee, Wis.

Industrial Brownhoist Corp., Cleveland, O.

National Equipment Corp., (Koebling, Insley), Milwaukee, Wis.

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Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

Universal Power Shovel Co., Milwaukee, Wis.

### SHUTTERS (Steel.)

Merchant & Evans Co., Philadelphia, Pa.

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Kinner Mfg. Co., The, Columbus, Ohio.

### SIEVES (Testing.)

Newark Wire Cloth Co., Newark, N. J.

### SILICATE OF SODA.

Grasselli Chemical Co., Inc., Birmingham.

### SITES (Manufacturing.)

Alabama Power Co., Birmingham, Ala.

Arkansas Natural Gas Corp., Shreveport, La.

Atlanta and West Point R. R., Atlanta.

Central of Georgia Rwy., Savannah, Ga.

Central Power & Light Co., San Antonio.

Fort Worth Chamber of Commerce, Fort Worth, Texas.

**Galveston, City of, Galveston, Texas.**  
Georgia Power Co., Atlanta, Ga.  
Jacksonville, City of, Jacksonville, Fla.  
Missouri-Kansas-Texas Lines, Dallas, Tex.  
Model Land Company, (Flagler System),  
St. Augustine, Fla.  
Norfolk-Portsmouth Ch. of Commerce Nor-  
folk, Va.  
Norfolk & Western Railway, Roanoke, Va.  
Tennessee Central Railway, Nashville.  
Texas Power & Light Co., Dallas, Texas.

**SKYLIGHTS.**

Milcor Steel Co., Milwaukee, Wis.  
Robertson Co., H. H., Pittsburgh, Pa.

**SLABS (Concrete Floor.)**

Amer. Cement Tile Mfg. Co., Pittsburgh.

**—(Concrete Roof.)**

Amer. Cement Tile Mfg. Co., Pittsburgh.

**SLAG, For Concrete.**

Gloss-Sheffield Steel and Iron Co., Bir-  
mingham, Ala.

Woodstock Slag Corp., Birmingham, Ala.

**—(Furnace.)**

Gloss-Sheffield Steel and Iron Co., Bir-  
mingham, Ala.

Woodstock Slag Corp., Birmingham, Ala.

**SLINGS (Chain.)**

Woodhouse Chain Works, Trenton, N. J.

**—(Wire Rope.)**

Roebbling's Sons Co., John A., Trenton, N.J.

**SLUICE GATES AND APPLI-  
ANCES.**

Smith Co., S. Morgan, York, Pa.

**SNATCH BLOCKS (For Wire  
and Manila Rope.)**

Patterson Co., W. W., Pittsburgh, Pa.

**SPADES.**

American Mfg. Co., Chattanooga, Tenn.

**SPEED REDUCERS.**

Earle Gear & Mach. Co., Phila., Pa.

**SPIKES, (Railroad, Ship.)**

Bethlehem Steel Co., Bethlehem, Pa.

Republic Steel Corp., Youngstown, Ohio.

Sweet's Steel Co., Williamsport, Pa.

**SPINNINGS (Metal for Aircraft.)**

Benson Brass & Chandelier Works, Kan-  
sas City, Mo.

**SPRINGS (Machinery, Railway,  
Spiral Steel.)**

American Steel & Wire Co., Balto., Md.

**—(Wire—All Kinds.)**

American Steel & Wire Co., Baltimore, Md.

**SPRINKLERS (Automatic Fire.)**

Grinnell Co., Inc., Providence, R. I.

**SPROCKETS.**

Diamond Chain & Mfg. Co., Indianapolis.

**STACKS (Iron and Steel.)**

Biggs Boiler Works Co., Akron, Ohio.

Chattanooga Boiler & Tank Co., Chatta-  
nooga, Tenn.

Chicago Bridge and Iron Works, Atlanta.

Downingtown Iron Works, Downingtown, Pa.

Hammond Iron Works, Warren, Pa.

Hedges Walsh Weldner Co., Chatta-  
nooga, Tenn.

Ingalls Iron Works Co., Birmingham, Ala.

Lombard Iron Works & Supply Co., Au-  
gusta, Ga.

Pittsburgh-Des Moines Steel Co., Pitts-  
burgh, Pa.

Schofield's Sons Co., J. S., Macon, Ga.

U. S. Pipe & Foundry Co., Burlington, N.J.

Virginia Bridge & Iron Co., Roanoke, Va.

**STAINS (Shingle, Woodwork.)**

Cabot, Inc., Samuel, Boston, Mass.

**STAIR Steps (Safety.)**

Irving Iron Works Co., Long Is. City, N.Y.

**—Treads.**

Central Iron & Steel Co., Harrisburg, Pa.

**STAMPING (Sheet Metal.)**

American Pulley Co., Philadelphia, Pa.

Bostrom Mfg. Co., E. A., Atlanta, Ga.

**STANDPIPES.**

Chattanooga Boiler & Tank Co., Chatta-  
nooga, Tenn.

Chicago Bridge & Iron Works, Atlanta, Ga.

Hammond Iron Works, Warren, Pa.

Pittsburgh-Des Moines Steel Co., Pitts-  
burgh, Pa.

**STATIONERS (Envelopes, Letter  
and Billheads, etc.)**

Smith & Son Co., Oscar T., Baltimore, Md.

Young & Selden Co., Baltimore, Md.

**STEAM SHOVELS.**

Bucyrus-Erie Co., Erie, Pa.

Thew Shovel Co., The, Lorain, Ohio.

**STEAM (Specialties.)**

Jenkins Bros., New York, N. Y.

Lunkenheimer Co., The, Cincinnati, O.

Mueller Co., Decatur, Ill.

**—Traps.**

Jenkins Bros., New York, N. Y.

**STEEL.**

Bethlehem Steel Co., Bethlehem, Pa.

Central Iron & Steel Co., Harrisburg, Pa.

Dietrich Brothers, Baltimore, Md.

Gulf States Steel Co., Birmingham, Ala.

Republic Steel Corp., Youngstown, Ohio.

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Tennessee Coal, Iron & Railroad Co., Bir-  
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**—(Cold Drawn.)**

Bliss & Laughlin, Inc., Harvey, Ill.

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Chattanooga Boiler & Tank Co., Chatta-  
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Hammond Iron Works, Warren, Pa.

Hedges Walsh Weldner Co., Chatta-  
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Phoenix Iron Co., The, Phila., Pa.

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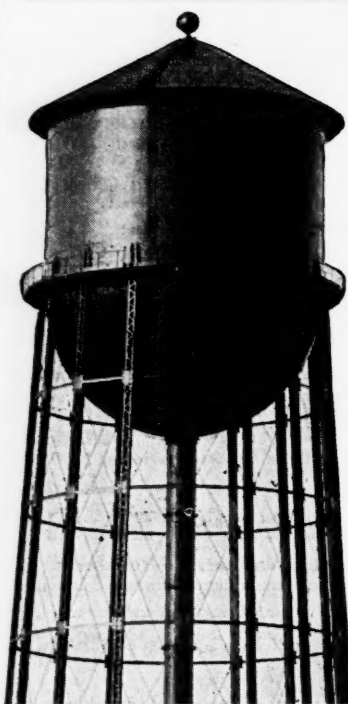
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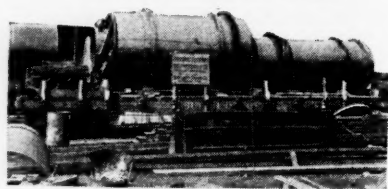
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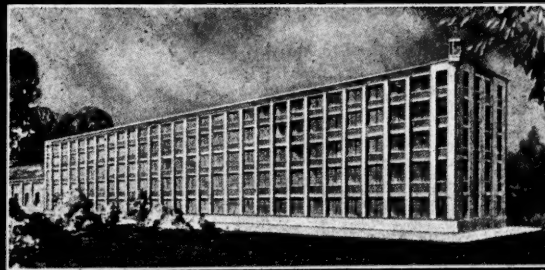
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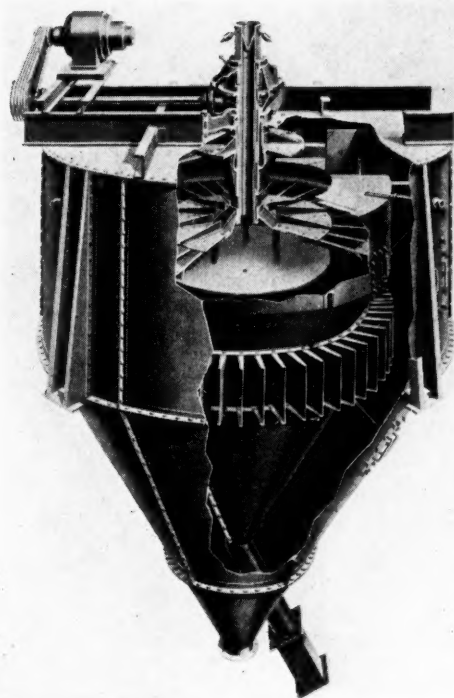
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